THE EXPECTANCY/VALENCE THEORY AND THE MOTIVATION OF FARMERS AND FARM WORKERS

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ABSTRACT

This study was undertaken to investigate the motivational determinants of samples of New Zealand farmers and farm workers. The Expectancy/valence theory of motivational effort, using a within-subject methodology was applied to 55 farmers and 35 farm workers. Barring two female farmers, all subjects were male. Apart from a few isolated cases the two groups failed to be able to predict perceived effort levels required to complete their farm jobs in order to obtain desired outcomes of work behaviour. No differences were evident between farmers and farm workers. The nature of the relationship of farmers' jobs to their desired outcomes fails to satisfy the model's underlying assumptions. A content analysis isolated several intrinsic lifestyles, stock and land orientated motivating features characteristic of both farmers and farm workers. It was concluded that the Expectancy/valence model of motivational effort is inappropriate for application to farming samples. No differences exist between farmers' and farm workers' job repertoires and desired outcomes of work behaviour.

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CHAPTER ONE

INTRODUCTION

Every action performed by an individual is partly determined by a force of motivation and like fingerprints, each individual's motivational force is unique. This makes measurement a complex and difficult task.

Motivation is used by psychologists in a variety of ways and circumstances and this has resulted in diverse definitions and conceptions of the term.

Hull (1943)[1] considered motivation as being a directional source of behavioural energy called a 'drive'. The directional component being termed a 'habit'. In his theory, behaviour resulted from the multiplicative relationship between drive levels and habit strength.

Locke (1968)[2] introduced the 'goal setting' approach to motivation. This theory argues that intentions to work towards a goal are the primary motivating force behind behaviour.

From a work perspective, the aims of understanding motivation assume three aspects; the understanding of behavioural causes, the prediction of the effects extraneous influences will have on behaviour, and the directing of that behaviour. These are all implicit in the question, 'What

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1. In Lazerson, 1975, p.359.

2. In Mitchell, 1979, p.255.

makes people work the way they do?'

As a consequence there has developed an extensive volume of literature containing many theories directed at determinants of an individual's motivational force (Mitchell, 1979).

The occupational field has seen theory research classified into two distinct classes, (Jamieson, 1982). Firstly, content theories are concerned with the specific entities within a general class of variables 'inside' the individual or in his environment that energises behaviour (Jamieson, 1982, p.7). These variables include such entities as drives, needs and rewards. An example of a theory within this field is Maslow's hierarchy of Needs.

The second class of theory of motivation is the Process theories. These theories which are of cognitive origin attempt to explain how behaviour is directed and why people choose particular strategies in order to achieve specific goals.

The Expectancy/valence theory of motivation is typical of this class of theory. Nadler and Lawler (1979, p.217), write of the theory,

> Enough is known that many behavioural scientists have concluded that it represents the most comprehensive, valid and useful approach to understanding motivation.

The theory is based on the assumptions that all individuals are different and are capable of making decisions about their own work behaviour based on their perceptions of the value of alternative behavioural outcomes.

The study reported in this thesis uses the Expectancy/valence theory of motivational effort within a rural setting in an investigation of farmers and farm workers. Little

previous research in this tradition has considered such a population.

The remainder of this report employs the following format. Chapter Two presents a review of the literature relevant to the development of the Expectancy/valence theory and its operationalisation in a field setting. A review of research conducted in the farming sector concludes Chapter Two. A chapter outlining the rationale of the study follows. Chapter Four presents the method used in investigation of the sample. This includes a description of the sample, research instrument and research procedure. Chapter Five deals with the results of the study, which are then discussed in the following and penultimate chapter. The summary and conclusions chapter is followed by references and an appendix containing a copy of the research questionnaire.

CHAPTER TWO

LITERATURE REVIEW

2.1 DEVELOPMENT AND VALIDATION OF THE EXPECTANCY/VALENCE MODEL

As its name suggests Expectancy Theory is based on the principle of expected value. This principle implies that people make choices based on the expected pay-offs of alternative behaviours. Two structural components constitute this process, *Expectancy* and *Valence*.

Expectancy is the subjective probability an individual gives himself of attaining a desired outcome of his behaviour. Valence is the anticipated value that this outcome will have to the individual. The industrial-organisational application of this theory proposes that work-related behaviours can be predicted once we know the valence, and expectancy probability that individuals attach to certain situational outcomes, (Wahba and House, 1974).

A third component to emerge from latter studies of Expectancy application is *Instrumentality*. In decision-making, an individual knows that a single level of performance can be associated with a number of different outcomes, each having a certain degree of valence. Some outcomes, however have valence because they have direct value or attractiveness. Others have valence because they are seen as leading to (or being 'instrumental' for) the attainment of other outcomes which have direct value or attractiveness. The measure of involvement for attaining the absolute outcome is then a

measure of instrumentality, (Wahba and House, 1974).

The assumptions underlying the theory are that relevant applications presuppose the possibility of subjective measures of expectancy and valence, that expectancy and valences are independent and that there is a multiplicative relationship between them, (i.e. the resulting function is a non linear monotonically increasing product of expectancies and valences), (Mitchell, 1974).

The essential concept of expectancy has been documented as early as the 17th century when it was used in the field of economics (Wahba and House, 1974). Its use featured the differentiation of expenditure choices using the objective probability of attaining a product combined with the objective value of money at that time. From this beginning its use has, in recent decades, become apparent in fields of utility, decision-making, attitudes and productivity.

The classical application of expectancy notions to occupational psychology came from Vroom (1964). Vroom proposed three expectancy models, that of Satisfaction, Motivation and Performance. All were based on the concepts of expectancy, valence and instrumentality. Instrumentality, at this stage of theory development was included in the job satisfaction and performance formulations only. Motivation (Vroom's second model), was seen to be the force on a person to perform an act. This force is a monotonically increasing function of the algebraic sum of the products of the valences of all outcomes and the strength of the expectancies, that the act will be followed by the attainment of these outcomes (Vroom, 1964, p.18).

Algebraically,

$$F = \sum_{j=I}^{n} (E_{ij}V_j)$$

where F = the force to perform an act,

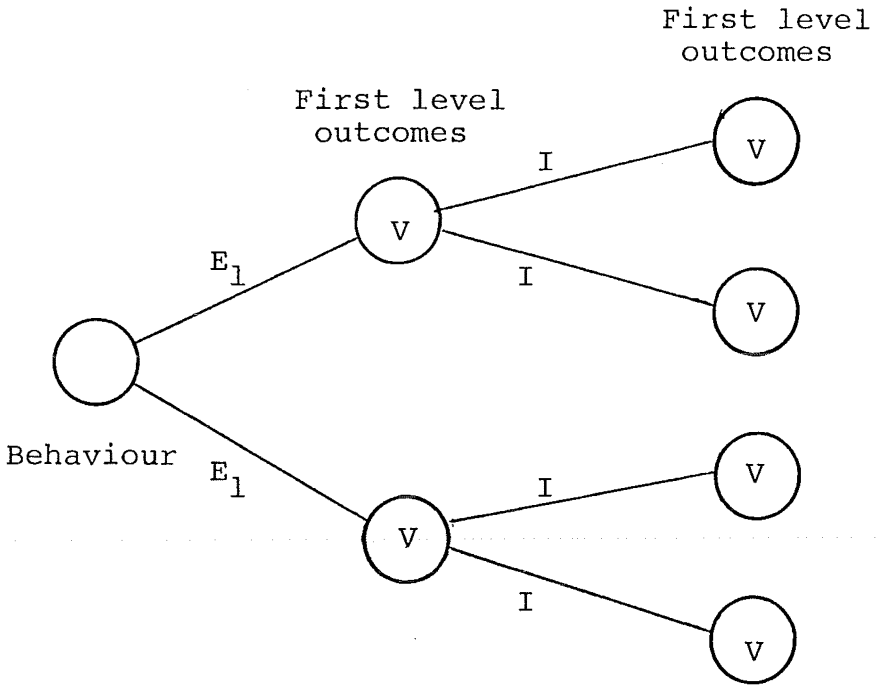
E_{ij} = Expectancy that act i will be followed by outcome j,

V_j = Valence of outcome j.

The measurement of expectancy was said to vary between 0 (certain nonoccurrence) and 1 (certain occurrence). Valence was considered to vary between -1 (very unattractive) to +1 (very attractive).

The original Vroom motivation model underwent several developments. Galbraith and Cummings (1967), attempted to test a distinction between first and second level outcomes first suggested by Vroom (1964), and then by Lawler and Porter (1967). The distinction alters the model so that job effort is predicted from the expectancy that a given level of effort will lead to a given level of performance weighted by the valence of that performance level, (see Figure 1). The valence of this performance level is then determined by examining the degree to which it is instrumental for the attainment of second level outcomes weighted in turn by their valences.

Figure 1 The Galbraith and Cummings Model



where Behaviour = Effort,

E = Expectancy,

I = Instrumentality,

V = Valence.

Mitchell (1974) provides the algebraic modifications for the revised model.

$$MF = E \left(\sum_{j=I}^{n} I_{ij} V_j \right)$$

where MF = Motivational force

E = the expectancy that effort leads to performance,

I_j = the instrumentality of performance for the attainment of second level outcomes,

V_j = the valence of the second level outcomes,

n = the number of outcomes.

A further modification to the model was proposed by Galbraith and Cummings (1967). Intrinsic and Extrinsic valences associated with the outcomes were isolated. The

value and relevance to the model will be discussed later in the text.

Vroom's models and their various modifications provoked considerable research activity. Typically the procedures followed a common pattern. Each subject indicated a degree to which working hard (an effort level) was seen to lead to good performance (a performance level). The subject also indicated the degree to which good performance was likely to lead to each of a predetermined list of outcomes. Finally, the subject estimated the valence for each outcome. These variables were then combined to generate a single E(ΣIV) score, (see Figure 1 for symbol key), for each subject. Scores were then correlated across subjects with a criterion variable. Typically self, peer or superior ratings of effort or performance served as a criterion variable.

Mitchell (1974), tabulates 13 such tests by five authors using the E(ΣIV) formulation (see Table 1). Eight of these found significant correlations with the criterion achieving correlations of about r = 0.30, (Range = 0.12 to 0.64). Thus, prior to 1974 general support established Expectancy theory as an acceptable model of behaviour. Subsequent testing however, provided a mixed set of results.

Matsui and Terai (1975), in a cross cultural investigation found Japanese correlations were as high as those in American studies and concluded with general support for the predictive ability of the model. Parker and Dyer (1976) supported the model when considering Retirement Decisions of Naval officers. Drory (1976) and Connolly (1976), could not establish commitment to support or non support of the model as their results were of a conflicting nature. Both authors plea for further indepth research of the model.

TABLE 1 Edited Reproduction of Mitchells (1974, p.1059)

Summary of Job Effort Findings

Investigator	Model	Results	Criterion	P
Graen, 1969	E(ΣIV) (achievement)	Task 1,2 r=0.28,0.39	Objective Performance	0.05, 0.01
	E(ΣIV) (money)	Task 1,2 r=0.15,0.06	Objective Performance	n.s. n.s.
	E(ΣIV) (control)	Task 1,2 r=0.04,0.03	Objective Performance	n.s. n.s.
Mitchell & Albright (1972)	E(ΣIV)	r=0.26	Supervisor Rating	0.05
	E(ΣIV)	r=0.64	Self Rating	0.01
Mitchell & Nebeker (1973)	E(ΣIV)	r=0.23	Hours spent	0.05
	E(ΣIV)	r=0.39	Self Rating	0.01
		r=0.28	Supervisor Rating	0.01
		r=0.16	Peer Rating	n.s.
Dachler & Mobley (1973)	E(ΣIV) (plant 1)	r=0.30	Objective Performance	0.05
	E(ΣIV) (plant 2)	r=0.12	Objective Performance	0.05
Arvey & Neil (1974)	E(ΣIV) (old)	r=0.21	Supervisor Performance	n.s.
	E(ΣIV) (young)	r=0.03	Supervisor Performance	n.s.

Froman, (1976), found the theory's application to training programmes extremely limited, as did Campbell and Willems (1975). Reinharth and Wahba (1976) conversely found no support at all for the predictive ability of the Expectancy/valence model against scale measured criterion Measures.

Campbell and Pritchard (1979), compiled a survey of approximately 35 published studies that have some relevance as a test of Expectancy theory predictions. The result of which showed that the available data do not portray the Expectancy model as a very powerful explainer of behaviour. The status of Expectancy theory in 1979 was the same as it had been described by Connolly (1976, p.46),

> the expectancy-type model appears to have enjoyed substantial if uneven support, in spite of some short comings in the relevant studies and seems to merit further work.

2.2 THE COMPONENTS OF THE MODEL

Research then moved from consideration of the model as a unit of analysis to investigation of the various components and alternative methodologies of Expectancy theory.

The logical foundation of component analysis is the dependent variable or criterion measures. Leon (1979), differentiated six dependent variables when considering outcomes with regard to prediction accuracy. They were self reported effort, observed effort, self reported performance, other rated performance, semi-objective performance and objective performance. Semi-objective performance measures are those derived from complex supervisory judgements but are not ratings. An example of such a measure would be percentage salary increases. Sale data would exemplify

objective performance measures. In Leon's study, the criterion measure exhibiting greatest prediction validity was a self reported effort rating ($r = 0.28$), with observed effort measures next, ($r = 0.23$). It should be noted that using performance measures as dependent variables (as the remaining four variables were) is subject to criticism. Vroom (1964), in his initial Expectancy formulations clearly distinguished between effort and performance. In doing so he developed an entirely separate model for prediction of performance. Many studies have subsequently employed a performance criterion for prediction of an effort model. This, Mitchell (1974), considers to be conceptually inaccurate.

A somewhat higher correlation was exhibited in Campbell and Pritchards' (1979), review of Expectancy studies. They indicate that almost all studies purporting to test a full expectancy model have been correlational field studies. The correlational ceiling was found to be approximately $r = 0.30$ when independent ratings of effort are used as the criterion. This ceiling is exceeded however, each time a self rated effort is used as the dependent variable. Campbell and Pritchard go on to say that self ratings of effort are constantly superior but introduce so much method variance into the correlation that interpretation of such a coefficient would be quite risky. The variance arises from the process of having the same individual provide ratings of the independent variables (i.e. expectancy, valence and instrumentality), and of the dependent variable. As a result the two measures are not experimentally independent.

Lawler and Suttle (1973), put this problem to the test by utilising three forms of predicted effort; self rating,

peer ratings and observer ratings. All three were found to show valid predictive accuracy. Turney (1975)[1], also provides support for self ratings of effort. He attained a correlation of 0.6 ($p<0.01$), between self rating and independent behavioural measures of effort. While behavioural or alternative methods with higher validities are more desirable, it is evident that self rating measures of effort have in the past provided satisfactory criteria in Expectancy research (Pritchard and Sanders (1973), Turney (1975), Muchinsky (1977), Kopelman (1977), Shifflet and Cohen (1980), Shifflet and Cohen (1982), and Anderson (1980)).

An allied problem of inconsistency, obvious in many studies, is the methods that have been used to measure the independent variables. De Leo and Pritchard (1974), consider this a possible reason for the consistently low correlations which are reported. Expectancy was conceptualised by Vroom as a probability, with each respondent choosing a measure from 0.00 to 1.00. As Mitchell (1974), shows, few authors have treated expectancy as such. Graen (1969), chose a five point scale, while Lawler and Suttle (1973) and Mitchell and Nebeker (1973) chose a seven point scale for measurement. Instrumentality suffers similar inconsistencies. Vroom's (1964), model suggested this variable may vary from +1.00 to -1.00. This reflects the relationship between good performance and the various outcomes. Some investigators have treated the instrumentality measure as a probability with subjects estimating the performance to outcome relationship on five, seven or 10 point scales. Rank orders, paired

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1. In Muchinsky (1977).

comparisons and forced distributions are other methods encountered in the literature.

Failure to use Vroom's original formualtions of instrumentality measure destroys an underlying assumption of the model. If it is considered that valence measures should vary from positive to negative, then at the two extremes (i.e. a negative valence x a negative instrumentality, or a positive valence x a positive instrumentality), the same force should be attained. If either independent variable was scored as a probability, an equivalent force is not obtained. This implies that a positive or negative perception of a behaviour outcome cannot be diametrically opposite. Theoretically, this seems devoid of logic but as Mitchell (1974), states, the impact of this problem is unknown.

Further inconsistencies arise from how each independent variable should be operationalised. Valence measures of outcomes have typically received one of three descriptions; the importance of the outcome (Porter and Lawler, 1968); the attractiveness of the outcome (Pritchard and Sanders, 1973); and the desirability of the outcome (Galbraith and Cummings, 1967). Once again referring to Vroom's initial formulation, it was envisaged that valence of outcomes should be determined in terms of 'anticipated satisfaction'. This is commonly equated with the 'attractiveness' of an outcome. Little research was undertaken to determine which is the best measure. Inconsistency in using the three variations was seen as a source of model variance (de Leo and Pritchard, 1974).

Ilgen, Nebeker and Pritchard (1981), was one investigation that did look at this issue. Using a clerical task simulation methodology they found that valences were best

measured using scales of attractiveness. This would appear to reinforce Vroom's original conception.

Specification of outcome lists is a further area of inconsistency in Expectancy research and has been the focus of a great deal of investigation. Early tests of the theory provided the subject with a list of outcomes from which the valence of each is considered. Mitchell (1974), described the generation of such lists as an unsolvable dilemma. Connolly (1976), suggests that a valid list should be composed from a variety of sources, including available survey data, preliminary interviews, pilot testing, particular theories of needs and the researcher's informed intuition. A basic premise of Expectancy theory suggests that each individual has unique perceptions of what energises motivation. The suggested list generating process contravenes this and assumes a set of outcomes is common to each individual within the tested sample space.

Perhaps the most theoretically desirable technique is subject generation of outcome lists. Connolly (1976), suggests that practical problems are associated with this method but fails to illustrate any. Ivancevich (1976), found that the prediction of performance of engineers was better when subjects generated their own outcome lists. This view was similarly expressed by Pritchard, De Leo and Von Bergen (1976), Mitchell and Biglan (1971), Mitchell (1974) and Parker and Dyer (1976).

Matsui and Ikeda (1976), considered the validity of standardised outcome lists against self generated lists in a Japanese sales setting. Although differences did not reach significance, self generated lists were not only found to be

more relevant, but a more effective means of obtaining expectancy theory measures. This reaffirms Vroom's original suggestion that self generated lists, although practically tedious, should be included within tests of the model.

A further finding from Parker and Dyer's (1976) investigation of reenlistment decisions among naval officers showed that superior accuracy of prediction was evident when the outcome lists were small in number. Similarly, Rosenberg (1965) suggests predictions based on large sets of outcomes are less accurate than those based on a small set. Leon (1979), considered this question directly, indicating the tendency of research to utilise widely different numbers of outcomes. Specifications have varied from one to 45 and have exhibited differing correlations of motivational force to criterion measures, of 0.00 to 0.50. Leon cites a study by Schwab, Olian and Heneman (1973), which showed that motivating force computed for Expectancy variables pertaining to 10-15 outcomes, explained more variance in the dependent variables than motivating force computed on the basis of one to nine or greater than 16 outcomes. This, to some extent was reinforced by Parker and Dyer (1976), who, although finding outcome numbers difficult to specify, decided that there should be at least more than five but less than 25 outcomes. Leon's (1979) research found methodological inconsistencies with Schwab, Olian and Heneman (1973), and from his own investigation considered that if an ideal number of outcomes does exist, probably five highly valent outcomes would be the best number of predictors of motivational force. A recent study in this field, Shifflet and Cohen (1980), provides evidence of the existence of more than two or three outcome categories. These categories defined degrees of

salience to the individual which would naturally be the case with self-generated outcome lists. They concluded that dimension scores composed of 11 items were substantially better predictors of self report criteria than was a standard list of 16 items.

In summary, a smaller list of between five and 11 salient (or self generated) outcomes appears to provide superior predictions of motivation. Too many outcomes of secondary importance simply adds "noise" (Mitchell, 1974).

Content of the outcome lists provides two areas of concern. The inclusion of 'intrinsic' and/or 'extrinsic' outcomes and 'positive' and/or 'negative' outcomes. The implication gained from Vroom (1964), is that intrinsic rewards should be omitted or at the very least considered separately. Vroom defined intrinsic rewards as those that are self administered, in contrast to those that are externally administered (extrinsic rewards). Misinterpretation and redefinition of these terms has subsequently led to much confusion in the literature, most notably documented by Parker and Dyer (1976). Galbraith and Cummings (1967), extended Vrooms' (1964) theory distinguishing between intrinsic and extrinsic valences associated with the various behavioural outcomes. House (1971), further refined the theory by distinguishing between two kinds of intrinsic valence of outcomes, (1), those associated with task performance, and (2) those associated with task accomplishment.

Following research by Graen (1969), Mitchell and Albright (1972), suggested that intrinsic outcomes yield superior predictions of performance and job satisfaction than do extrinsic outcomes. Wahba and House (1974), suggest that intrinsic outcomes may have greater motivational power than

extrinsic outcomes. Parker and Dyer (1976), tested both forms of outcome with respect to retirement decisions and found no support for intrinsic in preference to extrinsic outcomes. They conclude that the role of intrinsic and extrinsic outcome in expectancy research is a very complex issue which is still far from settled.

The second area of concern over outcome lists is the distinction between postive and negative outcomes. It was postulated by Mitchell (1974), that since both rewards and penalties are thought to have motivational value then the addition of both forms of outcome to the model would give it greater predictive value. This assumption received its first direct test from Parker and Dyer (1976). They compared the validity of an expectancy theory containing both positively and negatively valent outcomes with the validity of the same model with the negatively valent outcomes removed. Exclusion was found to increase, if only slightly, the predictive value of the model. This was in accordance with Anderson (1980), who utilised a subject generated, limited number outcome list with a sample of 107 public accountants. Statistical analysis of the Expectancy/valence model with the negative outcomes removed offered greater predictive ability than inclusion of the negative outcomes. Research in this area by Leon (1981), heralded a new problem. He found that subjects treat positive outcomes linearly in relation to perceived pay-off, (i.e. each outcome may be associated with gradations of valence depending on its ultimate value). Subjects fail to treat negative outcomes in the same manner. The concept of linear gradations in the negative direction escapes the subconscious capacities of the subjects. As such

they appear as just negative. Conversely subjects successfully perceive gradations of positive outcomes. The questionable status of positive and negative outcomes continues and until the demand for more research is fulfilled will remain an uncertain aspect of Expectancy theory.

2.3 WITHIN AND BETWEEN SUBJECT METHODOLOGIES

Perhaps the most serious criticism of many tests of Expectancy theory is their failure to use a within-subject methodology. Parker and Dyer (1976), and Kopelman (1977), present various theoretical and methodological reasons for preference of a within-subject approach. It is clear that Vroom (1964), viewed Expectancy theory as a within-person behavioural choice model. The typical practice, as mentioned above has been to compute for each subject under study a force score and a single criterion score based on a sample wide outcome list. The relationship between these two scores is then established using correlational techniques. The more theoretically precise within-subject approach suggests that an individual can choose the level of effort at which he desires to work from among a set of alternative levels. As Mitchell (1974), states, this requires that the investigator assess the degree to which each of a set of effort levels leads to each of a set of outcomes. Such an approach would require that separate prediction scores be generated for each level of effort and then determine which level the individual will choose.

Muchinsky (1977), Parker and Dyer (1976), and Kopelman (1977), similarly state that not a single investigation has adopted this methodology to that date. To quote Kopelman

(1977, p. 652),

> - In short, there has been a conceptual mismatch between expectancy theory as it is expounded and the data used to test it.

Despite the increased demands on investigators field time and questionnaire development, several methodological advantages do become apparent with the use of a within-subject methodology. A significant difficulty associated with between-individual expectancy research is the problem of inter-individual differences (Kopelman, 1977). As mentioned, each individual's reward perception is unique. By summing and correlating across individuals with a single criterion measure, individual differences contaminate predictions of the sample by directly affecting the dependent variables. Use of the between-individual paradigm to test behaviour predictions is an attempt to use group data to establish relationships at the individual level of analysis.

Kopelman (1977), and Muchinsky (1977), contrasted the two forms of expectancy research. Using 159 college students, Kopelman found the mean correlation of work effort to criterion performance as being $r = 0.24$ for the between-subject approach and $r = 0.35$ for the within-subject methodology. Similarly, Muchinsky's means were $r = 0.31$ and $r = 0.52$ respectively. This exemplifies the superiority of the within-subject methodology for prediction of work effort. Further support has been provided by Matsui, Kagana, Nagamatsu and Ohtsuka (1977); Oldham (1976) and Schmitt and Son (1981).

Muchinsky included within his research results correlations of various components of the Expectancy model as well as a mathematical formulation, with his criterion

measure. Four of the five components of his model had average correlations which equalled or approximated the average correlation of the complete model. As seen in Table 2, these findings are similar to those reported by Pritchard and Sanders (1973). In both studies the best prediction of self reported effort was not the complete model but a component; ΣV ($r = 0.54$) for Pritchard and Sanders and E ($r = 0.73$) for Muchinsky (1977).

TABLE 2 Comparison of Component and Total Model Formulations with Criterion Measures for Two Studies

Model Components	Muchinsky (1977)	Prichard and Sanders (1973)
Total Model		
$M = E(\Sigma IV)$	0.52	0.47
ΣV	0.52	0.54
ΣI	0.42	0.22
E	0.73	0.13
$E(\Sigma V)$	0.52	0.52
$E(\Sigma I)$	0.56	-

N.B. Figures in the body of the table are Pearson r correlations.

Where: M = Motivational Force

E = Expectancy

I = Instrumentality

V = Valence

This particular characteristic of Expectancy theory was first highlighted by Mitchell (1974), who examined eight studies that considered the validity of model components, specifically, the weighting of components with valence ratings.

Although the results were not clear-cut, Mitchell concluded that unweighted instrumentalities do as good a job of predicting effort as the total model and that all model components possess moderately good reliablity.

The Expectancy/valence model of motivation has received much literature focus. Conclusions regarding its validity appear guarded and dubious.

> Expectancy theory has become so complex that it has exceeded the measures which exist to test it.
>
> Lawler & Suttle, 1973, p.502.

Wahba and House (1974), considered the theory as perhaps the most widely accepted theory of work motivation among industrial-organisational psychologists of the day.

> Expectancy theory is a simple appearing formulation that encompasses a highly complex and poorly understood set of variables and variable dynamics.
>
> Campbell & Pritchard, 1979, p.242.

Prior to 1975 the emphasis was on complete model testing. This gave way to component analysis from 1976. However, perhaps the only common theme to emerge from many of the literature tests of the theory is a plea for further research. This study is an attempt to contribute to the fulfilment of this request.

2.4 RURAL PSYCHOLOGICAL RESEARCH

Research in agricultural settings is an aspect of work behaviour that has received little attention. Investigating job characteristics and job satisfaction within a rural sector, Clark (1979), highlighted the dearth of any form of psychological research within this area. This is a characteristic that is surprisingly evident in New Zealand, a country that relies so heavily upon agriculture for its

economic well-being. This is not only a New Zealand phenomenon however. Richards (1973), reviewed 25 years of research into the psychology of farming, (1945 to 1970). His review of 'psychological abstracts' revealed only seven articles in American Journals within this period that dealt with any apsect of agriculture. Similarly, a computer search conducted for this study within the psychology files since 1967 yielded 254 studies, involving rural samples. Of these only one pertained to a New Zealand situation, the vast majority being conducted in India.

The dispersed nature of the work force in urban industry contributes to this dearth of rural psychological research. The farming community of New Zealand is not large, accounting for 11.06 per cent of the total working population, (New Zealand Year Book, 1982). A small population such as this spread about the New Zealand rural area means no large corporate enterprises, no large groups of labour and no situations where the productivity capacity and behaviour of several hundred workers is influenced directly by the decision of a single manager. A farm management decision may influence the working capacity of five workers as opposed to 500. Adequate rural application of such concepts as leadership, quality of working life and stress would probably develop very different dimensions. This spread of population also introduces the cost-utility question so relevant to modern research. The geographical constraints upon access to a rural sample make it a very expensive exercise to use such a sample space.

Due to the seasonal requirements of farm work, Clark (1979), found interviewing this type of sample difficult.

Haymaking, harvesting and shearing made contact with farmers difficult due to the long and irregular hours worked. Wet weather was found to facilitate data gathering as farmers worked closer to home and had time not only to participate but to consider what was being asked of them.

Data gathering was often restricted to consultations with farmers and farm workers at morning and afternoon teas, as well as lunch hours, again because they were typically close to home. Difficulties arise in seeking subjects from the backblocks of their properties.

Seabrook (1982), is one of the few investigations to provide some observations, ideas and research findings related to the motivation and performance of workers within the agricultural sector. Seabrook considers research rife with dangerous researchers who devise a model, observe people and only see things that prove the model.

> Few models begin from the viewpoint of the individual and his core personality...The more one studies agricultural workers, the clearer it becomes that one has to attempt to understand the individual and not to apply generalised themes.
>
> Seabrook, 1972, p.68.

As a result of such observations Seabrook introduces two approaches to facilitate future analysis. The 'Status' approach rejects the idea that every worker aspires to the same goals and suggests that effective management comes from understanding the internal motivations of the worker and why he is like he is. The second or 'Functional' approach accepts that each person will respond to involvement and responsibility and will work towards a joint target. Here, the emphasis is on work targets, goals and work groups.

From her observations of 100 cowmen Seabrook came to no generalised conclusions to explain why agricultural workers

behave in the way they do. The same environment created different reactions within the cowmen.

This single investigation highlighted the virtual non existence of rural motivation research. Richards (1973), major finding indicated that since psychologists have largely ignored agriculture, most of the reviewed studies were conducted by other behavioural scientists.

There has been some interest shown in the concerns of farm labour and job satisfaction among farm workers. Little of this research has been carried out by psychologists. Clark (1979) was one exception. She found that as a consequence of their theoretical backgrounds the agricultural graduate is concerned more with the practicalities of farm workers, and as a result were more likely to investigate factors such as working conditions, hours of work, wages, social amenities and assessment of their employers.

Steeves (1969), concerned himself with the contrast in job satisfaction between the farm and non farm context. He showed that neither occupational sector may be more satisfied than the other. Harris (1980), surveyed farmers and farm workers looking for factors that could increase job satisfaction. Among his findings was a recommendation for farmers to allow their employees to live away from their job environment and for the employer to give better farm economic advice, (including hints on how to apply for rural bank loans, home ownership accounts etc.) and factors that could improve the farm workers job satisfaction via educational reform.

Clark (1979), investigated the importance of job dimensions and individual characteristics in job satisfaction on a sample of farm workers from a psychological point of view.

This she did utilising the Job Diagnostic Survey (modified in form), created by Hackman and Oldham (1974).[1] It was found that there was a significant occupational effect among the various groups. Specifically, farmers perceive their job as being relatively high in the degree of autonomy, skill variety, task identity and job feedback, in comparison with farm workers and agricultural students. The opposite was the case in task significance, degree of feedback from agents and dealing with others, where farm workers and agricultural students scored higher. Concluding her study Clarke considers that there is little need or scope for the enrichment of a farmer's job, and not much more for the farm worker. An important point to come out of this study is that Hackman and Oldham's model of job characteristics is inadequate in a rural context.

Cant and Woods (1968), conducted a study designed to identify and measure factors that make farm employees satisfied or dissatisfied with employment. Their study was based on the methods of Herzberg, (1959),[2] and looked at factors of satisfaction such as wages, living conditions, status and job training. They concluded that farms with the most serious labour problems are likely to be the ones where employees lack status, receive little recognition for work well done and get on badly with the farmer. The results of this study suggest that dimensions similar to those identified by Herzberg were associated with job satisfaction and dissatisfaction by farm employees of New Zealand.

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1. In Clark (1979).

2. In Clark (1979).

Thus, in 1968 Herzberg's model appeared quite robust in the type of sample space to which it may be applied. Surrounding the timing of Cant and Woods (1968) Herzberg application, was a growing body of literature criticising this methodology, (Bockman, 1971). As a consequence of this literature trend, Cant and Woods' successful use of the Herzberg methods should be regarded tentatively. Its quality of robustness becomes dubious within the bounds of criticism.

In summary, the literature focus on a New Zealand farming sample has not included many psychologists. To date it appears the field of sociologists and agricultural research units. This is not purely a New Zealand phenomenon, with India seemingly the only international exception to this dearth of research. Of the limited probes into the area by psychologists, a tentative use of Herzberg's methods by Cant and Woods (1968), and an inappropriateness of Hackman and Oldham's Job Diagnostic Survey by Clarke (1979), characterise a New Zealand farming sample.

CHAPTER THREE

RATIONALE

The motivation of people working within the farming sector is an area marked by personal opinions and stereotypic generalisations. It was decided to investigate characteristics of farmers and farm workers using the Expectancy/valence theory of work effort. Probably the theory is still regarded as the most acceptable theory of work motivation (Wahba and House, 1974). An application to the agrarian work force was intended to elicit further features of the motivation of people working in rural industries.

Since Vroom (1964), and the first industrial organisational conception of Expectancy/valence theory, many subsequent tests of various samples have developed and extended the theory. As yet, the farming world has not received attention from this perspective. Indeed, little motivation research of any variety has been directed to this sample. Seabrook (1982), is one of the few exceptions to this generalisation.

To date, rural motivation has been the field of speculative reasoning derived from intimate knowledge of personal experiences. Most rural farmers are willing to venture 'love of the land' and 'lifestyle' explanations of farming motivation. This may well be the situation, but it remains to be validated.

The rural contribution to primary production is clearly documented by Clark (1979). Its 70% contribution to New Zealand's export income, emphasises the importance of the farming workforce. However, farming in the present economic climate faces many problems. General dissatisfaction is evident among farm owners whose existence is so sensitive to the state of the country's economy.

Monetary reward as a motivator of the farm worker appears to be of questionable efficacy. Recently, when the New Zealand workforce had an average weekly wage of $247.25 (New Zealand Year Book, 1982), the award rate for farm workers on sheep, meat and wool farms and stations was $140.05 per 45 hour week, (Arbitration Court, 1982). A housing and food allowance inflated this total to a possible $162.62 per week for a farm worker over the age of 20 years. This was $78.00 below the national average weekly wage. Four other awards covered the remaining agricultural workers. With the housing and food allowances, the highest weekly wage was $179.49 for farms and stations (dairy farms) employees and the lowest being $159.20 for agricultural workers (market garden) employees, (Arbitration Court, 1981).

It is anticipated that an attraction to farm work regardless of employer or employee status, is not based primarily on monetary reward but rather focuses on the land and outdoor existence.

The design of the Expectancy/valence model utilised in this study is such that an insight into motivational outcomes of behaviour may be determined. In the form of a content analysis, this should approach Seabrook's (1982), 'status approach' of viewing each individual's contribution as a separate entity.

The value of a relatively unresearched sample with an untested theory (in this situation), is two-fold. Results should produce characteristics of rural motivation useful in the quest for knowledge. The application and testing of a well-researched psychological model to the farming world is also of importance.

Cant and Woods (1968), utilised a Herzberg (1959)[1] typology to identify and measure factors which make farm employees satisfied or dissatisfied with their employment. In this situation, application of the Herzberg method and results appeared to generalise to a farming sector sample. Clark (1979), adopted Hackman and Oldham's Job Diagnostic Survey (1974 and 1975)[1] to study the job satisfaction of farmers, farm workers and agricultural students. In this situation the underlying Job Characteristics model was found to be inadequate.

A test of the Expectancy/valence model of motivational effort in this new setting contributes to the adaptability of standard psychological models to the farming population.

This study is a probe into the motivation of farmers and farm workers, seeking an involvement with the lifestyle and land as opposed to a money or material reward involvement. It is an attempt to test a standard psychological model in a relatively new context and determine its adaptability to a rural setting. The research thus has the status of an exploratory investigation.

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1. In Clark (1979).

CHAPTER FOUR

METHOD

4.1 THE RESEARCH SAMPLES

The final sample consisting of 109 males and two females was composed of two distinct groups; farmers and farm workers. As a result of the sampling procedure it was later found that farmers (N=64; 62 males and two females), had varying ownership status. Forty farmers owned their properties while 24 farmers part-owned theirs.

Farm workers (N=47), similarly included employment sub-groups. Twelve were employed as managers of the property on which they worked, 27 were employed as farm workers by non-relatives and a further eight by their fathers in anticipation of eventually taking over the property.

These various groups of both farmers and farm workers became included in the sample as a consequence of selection and hence have little value to this study. Any sub-grouping effects that do possibly exist would unlikely be evident due to the small number within each sub-group.

It was decided to sample workers from a single class of agricultural activity due to the difficulties of adapting the research instrument to the many and varied farm settings in New Zealand. Sheep and cattle farming, typical of the low lying foothill country that is common in the Canterbury region became the target population. This type of farming has an advantage for would-be researchers. The farmer typically

employs a farm worker although this is dependent upon the size of the property. This eases the economic burdens of testing such a sample. The region of study spread from the Parnassus-Cheviot area of North Canterbury through the hill country to Waiau and Culverden, finishing in the foothills of the Southern Alps in Mid-Canterbury, this latter region being termed Ashburton.

Table 3 shows the regional spread of the sample. These areas were chosen chiefly because they exhibited the type of sheep and cattle farming desired, and for geographical convenience in terms of access for the researcher.

TABLE 3 The Regions from which the Sample was obtained.

Region	Numbers of Farmers	Numbers of Farm Workers
Ashburton	2	10
Rangiora	-	4
Amberley	8	2
Waikari	6	3
Hawarden	11	2
Culverden	5	5
Waiau	7	2
Parnassus	5	5
Cheviot	12	9
Omihi	2	2
Scargill	4	2
Other*	2	1
Total	64	47

* Other: this refers to farmers/farm workers who once resided in this area and have since moved away.

Age ranges were similar for both groups. Farmers ranged from 23 to 67 years with a mean of 40.35 years. A cluster of 23 farmers within the 29 to 34 age group skews the sample.

Farm workers ages were contained within 17 to 55 years, the mean age being 32.87 years. A mode of only four (at 29 years) indicates a more uniform spread throughout the age range.

As mentioned, the sample is predominantly male, with only two female respondents participating. No prior preference was intended and the response merely confirms that paid employment in farming is a male activity. Both females were part farm owners in conjunction with husbands. Their responses clearly indicated that the farm work and economic return was genuinely shared within the relationship.

4.2 THE RESEARCH INSTRUMENT

4.2.1 General Outline

A questionnaire, comprising six sections, based on the version used by Muchinsky (1977), was developed for this sample.[1]

The first section concerned biographical and filing data. The next four sections directly measured the Expectancy components required for the model. Section two required the respondents to list the jobs they personally do in order of effort output from the hardest to the easiest. The jobs were to be drawn from a master list provided to each subject. The list allowed sufficient room for alteration and modification to establish a unique and personal job list for each respondent. To complete section two percentage estimates of effort were estimated for each job. This section formed the dependent variable or criterion to which the remaining components were related.

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1. A copy of the final research instrument is contained in the Appendix.

Section three required respondents to list up to 10 motivating reasons why they work the way they do each day. These reasons, termed outcomes of their work behaviour, were then scored on the basis of their attractiveness using a seven point scale ranging from -3 to 3, -3 indicating this outcome to be most unattractive and 3 as being most attractive. This section provided scores of 'valence' for each outcome.

Section four related each outcome to each job, again using a similar scale. -3 indicated that doing a good job detracts from attainment of the outcome to +3 which indicated that doing a good job is the sole way to achieve the outcome. The resultant measures were determinants of 'instrumentality'.

Section five required respondents to rate each job done on a scale of 0 to 5. Here 0 indicated no relationship between working hard on the job and being a successful farmer, to 5 which showed a strong relationship between working hard on the job and being a successful farmer. These probabilities provided measures of 'expectancy'.

The final section provided extended knowledge of how respondents regard their farm jobs. A ranking of the degree of preference for doing each job was attained. This section had no specific relevance to the Expectancy model, but was included to provide additional data regarding farm jobs.

4.2.2 Development and Pilot Testing

As a within-subject design was to be utilised in this study it was decided to use a self-report criterion as the dependent variable. As stated in the literature review, this methodology appears to provide the best predictors of work motivation, despite some criticism of its accuracy, (Campbell

and Pritchard, 1979). Establishing a list of jobs specific to each respondent required using an open-ended list that each individual could add to depending on their specific circumstances. To aid this, a core list of jobs, that are common to most sheep and cattle farms, was provided. This was developed from pilot testing of a number of farmers/ farm workers.

An original list of some 24 jobs was gained from interviews with farmers and from Ministry of Agriculture and Fisheries guidelines. The pilot testing called for considerable condensing to a core list of 13 jobs. As an example, initially sheep drafting, sheep drenching and sheep dipping were treated as separate jobs. As a consequence of pilot testing it was found that if sheep are bought into the yards for one of these treatments, invariably they are all done or at least are considered as similar jobs by the subjects. As a result a condensed 'sheep yards' job replaced these three.

By allowing the subjects to delete core jobs not done, and also to add jobs not specified in the core list, it would be possible to obtain a job list specific to each individual. With intimate knowledge of these jobs little difficulty was envisaged in respondents attaching a percentage rating of effort expenditure to each job.

The specification of outcomes in section two was developed from studies quoted in (Mitchell & Biglan (1971), and Parker & Dyer (1976)). Subject specification, rather than researcher specification, received the greatest support in previous research and was the eventual form used in this study.

Pilot testing of 12 farm workers from the Conway flat region of North Canterbury produced 22 separate answers to the

instruction 'write as many reasons you can think of, that motivate you to work'. As can be seen from Table 4, only two motivating factors were common to all those interviewed. This suggests that perhaps a uniform list of outcomes would be difficult to obtain for this sample. The result of this finding as well as the literature trends, pointed to the desirability of subject generated outcome lists to be used in this investigation. This formulation also fits into the spirit of a within-person design where data should be specific to the individual respondent.

Studies reported in the literature review (Leon (1979), and Shifflet and Cohen (1980)) suggested that a small list of between five and 11 salient (or self generated) outcomes would provide the best and most manageable predictions of motivation. Acting on this justification, a list of 10 outcomes was requested from each respondent. This allowed respondents the option of stating the number of outcomes (up to 10) that they sought in their work.

The measurement and operationalisation of the three components of the model are consistent with the most appropriate recommendations to emerge from the literature. Invariably, these date back to Vroom's (1964), conception of Expectancy/ valence testing. Expectancy was measured as a probability with each respondent choosing a measure from 0 to 5. Instrumentalities and the valence of outcomes used a measure consistent with Vroom's original -1.00 to +1.00 formulation. Here a seven point scale from -3 to +3 is used. Pilot testing used an 11 point scale from -5 to +5, however, respondents found it difficult to use intermediate positions on the scale.

TABLE 4 Motivating Factors of Pilot Study Farm Workers[1]

Outcome	Frequency
1. The outdoor life	12
2. Independence/own boss/time off to do your own thing	12
3. Challenge - using your own judgement	10
4. Job satisfaction	7
5. Non repetition of work	6
6. Handling of stock/own dogs	6
7. To work into family/own farm	5
8. Financial security will get with own place	5
9. Perks (mutton etc.)	3
10. Worker-boss understanding	3
11. Community spirit (social life)	3
12. To do better than last year	3
13. Gain experience	3
14. No pressures of city life	2
15. Incentives (running own stock)	2
16. To gain authority (head shepherd	2
17. To always have a better team of dogs	2
18. Hunting/farm related recreation	2
19. Freedom from unions	2
20. Live-in positions - no domestic responsibilities	1
21. Avoid unemployment	1
22. Working in solitute/self sufficient work force	1

1. N = 12

The valence of outcomes was operationalised as a degree of 'atractiveness', again consistent with Vroom's original conceptualisation.

An initial complete questionnaire was then pilot tested with 10 farmers and 10 farm workers. A page for comment on ease of completion and for general opinions provided the basis for extensive redesign. At 17 pages, its length posed the most serious obstacle. Almost all of the pilot sample expressed the disdain that rural workers have for paperwork. This was very evident in the way these questionnaires were completed and in final response rates. Redesign of the format and job lists (as already mentioned), reduced the length to a more manageable seven pages.

Further modifications resulted from constant enquiries concerning the meanings of words and misunderstandings of what specific questions required. In effect it had to be translated to a rural context for respondents to be able to understand instructions. The very nature of farmwork for many farm workers demands little book work, or use of the written medium. Expression on paper also seemed foreign to many respondents. A recurring criticism was that it was easier to ring or cross an answer selected from a list as opposed to writing their own views.

The second format was developed and tested on five farmers and five farm workers. Despite the continuing dislike of paperwork it was considered that the instrument was satisfactory for eliciting the information required. From the pilot testing procedure it was envisaged that the questionnaire would take approximately one hour to complete.

4.3 RESEARCH PROCEDURE

Access to extensive numbers of farm workers is a difficult task due to the geographical spread of the sample. An approach made to the Canterbury Regional Farm Workers Association (CRFA), yielded a list of financial members for the Canterbury region. Access was also gained to area meetings of some of the contributory bodies to the CRFA. The contributory bodies being area farm worker sub associations within the Canterbury Region. Attendants at the area meetings were given an explanation of the background, aims and requirements of the study and then asked for voluntary participation. Twenty-three questionnaires were distributed in this manner. Each questionnaire was accompanied by a stamped return envelope as it was too long to complete at the time of interview.

A base was set up in Cheviot from where travel to farms in the region was possible. Farm workers from the CRFA membership list, and farm workers, who were encountered by chance were visited, as were as many farms as possible in this region. Subsequent bases were set up in Amberley and Christchurch. In this way a further 50 questionnaires were distributed to farm workers and 94 to farmers.

Meal and tea break times proved to be the most fruitful times to visit as typically respondents were close to home. Intervening times provided travelling time between farms. The format of the initial interview had no set procedure. It contained an explanation of the aims and origins of the study and allowed the interviewee the voluntary option of participation.

Due to the costs involved in this method of distribution, it became necessary for the remaining questionnaires to be

delivered in a voluntary postal fashion. A questionnaire, a stamped return envelope,and a covering letter were sent to the remaining farm workers on the CRFA membership list (78 questionnaires). Farmers and their addresses were selected from a farm location map on a geographical location estimate of sheep and cattle farms supplied by the Ministry of Agriculture and Fisheries. A further 61 questionnaires were distributed in this fashion. The covering letter contained the same information conveyed in the initial interview of the personal distribution method. An additional request for those unwilling to participate to return their questionnaire blank was included.

In all manners of questionnaire distribution it was explained that completion of all parts of the questionnaire was necessary for adequate analysis of their responses.

Following an interval of three weeks a request was published in a North Canterbury news bulletin for the completion and return of outstanding questionnaires. After a further four weeks each subject with an outstanding questionnaire was posted a written request for the return of their questionnaire. Many of the questionnaires were returned blank or in such an incomplete state that they had to be discarded from the sample.

The response rates are shown in Table 5.

The response rate for postal delivery is marginally superior to those delivered personally. However, regardless of delivery mode response was extremely poor. The re-occurring disdain that farmers and farm workers have for paperwork appears very real. It should be noted that questionnaire deployment coincided with final dates for the

return of government farm statistics, which is a long and tedious written exercise for farmers. This may have had some influence on the low response rate of 36%.

TABLE 5 Response Rates

	Questionnaires Delivered Personally		Questionnaires Sent by Post		Not Returned	Discarded	Usable	% Usable Response
	Delivered	Received	Delivered	Received				
Farmers	94	45	61	32	78	13	64	41
Farm workers	73	28	78	36	87	17	47	31
Totals	167	73	139	68	165	30	111	36%

CHAPTER FIVE

RESULTS

5.1 TYPES OF ANALYSES

Analysis of the questionnaire data assumed two forms,

(1) The Expectancy/valence Model and its components.

(a) The various components of the Expectancy/valence model, ($M=E(\Sigma IV)$), the sum of the instrumentalities (ΣI), the Expectancies (E), and the Expectancy multiplied by the sum of the Instrumentalities ($E(\Sigma I)$) were computed. Pearson's r correlation coefficient was used to relate these variables to self rated effort levels for individual farmers and farm workers.

(b) Descriptive statistics were used to investigate the validity of the correlation coefficients.

Analyses were carried out using the Statistical Package for Social Sciences (SPSS).

(2) Content Analysis.

(a) Analysis of the perceived work-related outcomes considering their valence ratings, number and content for farmers and farm workers.

(b) Analysis of the jobs done by the sample considering effort ratings, number, desirability rankings and variety.

5.2 EXPECTANCY/VALENCE MODEL ANALYSIS

5.2.1 Pearsons r correlation coefficients

A similar analysis was applied to each individual in the sample based on that used by Muchinsky (1977). Having defined a number of behavioural outcomes that stem from work behaviour and having attached a valence rating to each, the respondents' instrumentality score for the outcomes relative influence upon a defined list of jobs was summated. The valence ratings of each outcome was then multiplied by the summated instrumentalities. A further multiplication by the respondent's expectancy score for that job completes the calculation of a force score of motivation for that particular job.

A similar force score was calculated for each job in the respondent's job repertoire (constituting a separate motivational force for each effort level predicted by the respondent).

These force scores were then correlated with the varying effort levels predicted to accomplish each job.

The components, 'the sum of the instrumentalities', 'expectancies' and 'expectancy multiplied by the sum of the instrumentalities' were also correlated with the self-rated effort levels. The resultant correlations for farmers are shown in Table 6.

Pearson r correlations show the degree of relationship existing between two variables. These variables are usually represented by a set of figures. The formula produces a single figure ranging from +1.00 to -1.00. A correlation of +1.00 shows a perfect positive correlation. This means that if one variable increases in a way that is identical to

TABLE 6 Validity Coefficients of the Complete Model and Components for Predicting Criterion of Self-rating of Effort for Farmers

Subject	Model	(Prob)	Sminstr	(Prob)	Expect	(Prob)	Expint	(Prob)
1	-0.2643	0.230	-0.1673	0.322	-0.2430	0.249	-0.2373	0.255
2	0.0035	0.496	-0.3082	0.193	0.0498	0.446	-0.0788	0.414
3	0.1714	0.296	0.3270	0.150	-0.0809	0.401	0.1331	0.340
4	0.0173	0.480	-0.2562	0.224	-0.2232	0.255	-0.1264	0.356
5	-0.1870	0.261	-0.1327	0.326	-0.1093	0.355	-0.1866	0.261
6	-0.3894	0.084	-0.5047*	0.033	-0.1592	0.293	-0.4055	0.075
7	0.3472	0.180	0.2984	0.218	0.3872	0.152	0.2298	0.276
8	-0.3508	0.132	-0.4461	0.073	-0.2199	0.246	-0.4258	0.084
9	0.2926	0.222	0.2173	0.287	0.2945	0.221	0.2923	0.223
10	-0.3441	0.165	UNCALC	-----	0.3441	0.165	-0.3441	0.165
11	0.3746	0.143	0.5351	0.055	-0.0759	0.418	0.1735	0.316
12	0.2921	0.166	0.4082	0.083	0.3345	0.132	0.4549	0.057
13	0.6370*	0.024	0.7320**	0.008	0.4856	0.077	0.5943*	0.035
14	-0.3335	0.190	0.4806	0.095	-0.4836	0.094	-0.3382	0.187
15	0.3748	0.180	0.3884	0.171	0.0479	0.455	0.4247	0.146
16	-0.1094	0.355	-0.3768	0.092	0.1567	0.296	-0.1441	0.311
17	0.7779**	0.004	0.8770***	0.000	0.7231**	0.009	0.7408**	0.007
18	0.0753	0.399	-0.0782	0.395	0.1885	0.259	0.0466	0.437
19	-0.3484	0.122	-0.1852	0.272	-0.0164	0.479	-0.2291	0.226
20	-0.0517	0.447	-0.5313	0.070	0.2220	0.283	-0.1494	0.351
21	0.0607	0.426	0.1218	0.353	0.1563	0.431	0.0975	0.382
22	-0.8206***	0.001	-0.6208*	0.021	-0.7109**	0.007	-0.8026***	0.001
23	-0.6291**	0.008	-0.4200	0.067	UNCALC	-----	-0.4200	0.067
24	0.4252*	0.039	0.0117	0.482	0.3194	0.098	0.4322	0.037
25	-0.3330	0.133	-0.7317***	0.001	-0.5771*	0.012	-0.7991***	0.000
26	0.2241	0.254	0.1157	0.367	0.4038	0.109	0.1540	0.326
27	-0.0469	0.449	0.5072	0.067	-0.1685	0.321	-0.0548	0.452
28	0.5622*	0.045	0.5529*	0.049	0.5229	0.060	0.5964*	0.034
29	-0.2975	0.237	0.0095	0.491	-0.3661	0.186	-0.2369	0.286
30	0.1923	0.265	0.3238	0.140	0.0382	0.451	0.2071	0.249
31	UNCALC	-----	UNCALC	-----	UNCALC	-----	UNCALC	-----
32	-0.5022	0.125	-0.6071	0.074	-0.5527	0.099	-0.5269	0.112
33	-0.4923	0.052	-0.4563	0.068	-0.4015	0.098	-0.3999	0.099
34	0.0000	0.500	UNCALC	-----	0.0000	0.500	0.0000	0.500
35	-0.1678	0.311	UNCALC	-----	-0.1678	0.311	-0.1678	0.311
36	-0.3451	0.182	-0.0552	0.444	-0.4400	0.118	-0.3355	0.189
37	-0.3119	0.139	-0.6062	0.011	0.3533	0.108	-0.4494	0.053
38	0.4077	0.107	0.5080	0.055	0.3824	0.123	0.4188	0.100
39	-0.7163**	0.004	-0.7477**	0.003	-0.3449	0.136	-0.7569**	0.002
40	0.1656	0.294	0.4793*	0.049	0.0714	0.408	0.1811	0.277
41	-0.0683	0.436	UNCALC	-----	-0.0683	0.436	-0.0683	0.436
42	0.1602	0.284	-0.0209	0.471	0.2223	0.213	0.1619	0.282
43	0.1501	0.289	0.1150	0.336	0.0000	0.500	0.0788	0.386
44	0.1565	0.333	UNCALC	-----	0.1565	0.333	0.1565	0.333
45	-0.0699	0.424	-0.1762	0.313	-0.0890	0.403	-0.0568	0.438
46	0.4351	0.052	UNCALC	-----	0.4351	0.052	0.4351	0.052
47	-0.4589	0.218	-0.6598	0.113	-0.1521	0.404	-0.4832	0.205
48	UNCALC	-----	UNCALC	-----	UNCALC	-----	UNCALC	-----
49	-0.4279	0.083	UNCALC	-----	-0.4279	0.083	-0.4179	0.083
50	0.4211	0.113	0.3117	0.190	-0.0362	0.461	0.2810	0.216

Subject	Model	(Prob)	Sminstr	(Prob)	Expect	(Prob)	Expint	(Prob)
51	-0.5287	0.180	UNCALC	-----	-0.5287	0.180	-0.5287	0.180
52	-0.0986	0.358	-0.0339	0.450	-0.1127	0.339	-0.0985	0.363
53	0.8554***	0.001	0.8062**	0.002	0.7920**	0.003	0.8977***	0.000
54	0.0703	0.414	UNCALC	-----	0.0703	0.414	0.0703	0.414
55	0.0902	0.370	0.4078	0.058	0.1402	0.302	0.3089	0.122

Model = Total Model

Sminstr = Sum of the Instrumentalities

Expect = Expectancy Values

Expsint = Expectancy Times the Sum of the Instrumentalities

(Prob) = The Probability of Occurrence

Uncalc = The Correlation was unable to be calculated

* = $p<0.05$

** = $p<0.01$

*** = $p<0.001$

that of the second variable, a significant relationship exists between the two. A -1.00 correlation show a negative relationship. A correlation of zero indicates no relationship. It should be noted that a Pearson r correlation is not a causal measure, but merely descriptive of any evident relationships.

Perhaps the most apparent feature of the farmer sample is the lack of significant correlations. In the 'model' column, only eight farmers exhibited significant r values. The results from subjects 13, 17, 24, 28 and 53 show positive correlations of at least $p<0.05$ significance. Subjects 22, 23 and 39 conversely, have significant correlations to at least the $p<0.05$ level of significance. Subjects who do exhibit a significant 'model' to effort correlation typically also exhibit correlations of the components to effort ratings of similar significance levels.

Subject 25 is the only respondent to show significant component correlations without having a significant 'model' to effort correlation.

Subjects 6 and 40 show significant 'sum of instrumentality' relationships to self rated effort predictions without any indication of a 'model' or remaining component relationship.

Two of the respondents have at least one component (or as in the case of subjects 31 and 48, the whole model) that was unable to be correlated with their ratings of effort. An incalculable correlation for the 'sum of instrumentality' component results from respondents scoring the same instrumentality rating for every outcome - job, relationship. This indicates an inability to differentiate the contribution

different jobs have to obtaining relevant outcomes. Similarly an incalculable 'expectancy' correlation results from the inability to distinguish expectancy dimensions from different jobs. In this situation the expectancy ratings are the same for all jobs. A lack of distinction is hence compounded in the 'expectancy times the sum of the instrumentality' component.

In the case of subjects 31 and 48, each job received the same expectancy, valency and instrumentality ratings thus making correlation calculations impossible. Although the respondent indicated a different effort level required to complete each of the jobs he does, they appear to him, to have no discriminatory power in achieving his desired behavioural outcomes.

Similar 'model' and component correlations with self-rated effort levels for farm workers are exhibited in Table 7. As with farmers, few farm workers' results indicate significant correlations. The results of subjects 2, 10, 13 and 15 show positive relationships between effort levels and predictive ability of attaining desired work-related behavioural outcomes. From the significant negative correlations, subjects 3, 16 and 26 show a declining predictive ability as effort levels required for successful job completion increase. All significant levels have at least a $p<0.05$, with subjects 3, 10 and 13 reaching a high $p<0.001$ level of significance.

Significant 'model' correlations in the farm worker sample indicate significant relationships with components of the model and the self rated criterion. Perhaps an indicator of the potency of the 'sum of the instrumentality' as a predictor for some subjects (namely respondents 5, 8, 12 and

TABLE 7 Validity Coefficients of the Complete Model and Components for Predicting Criterion of Self Rating of Effort for Farm Workers

Subject	Model	(Prob)	Sminstr	(Prob)	Expect	(Prob)	Expint	(Prob)
1	0.3542	0.218	0.5718	0.090	0.4871	0.134	0.5530	0.099
2	0.6452*	0.016	0.6084*	0.024	0.6440*	0.016	0.6451*	0.016
3	-0.8576***	0.000	-0.6492**	0.008	-0.7796***	0.001	-0.8277***	0.000
4	0.0102	0.487	-0.1427	0.321	0.1275	0.339	0.1343	0.331
5	-0.1109	0.373	-0.6139*	0.022	-0.0323	0.462	-0.1129	0.371
6	-0.2026	0.264	-0.4705	0.061	-0.3422	0.138	-0.3604	0.125
7	0.4998	0.085	0.5199	0.076	UNCALC	-----	0.5199	0.076
8	-0.3479	0.079	-0.4525*	0.030	0.5438**	0.010	-0.3148	0.102
9	0.2982	0.161	0.2606	0.195	0.1178	0.351	0.2696	0.187
10	0.6787***	0.001	0.7819***	0.000	0.8306***	0.000	0.7413***	0.000
11	-0.4153	0.133	-0.4543	0.110	0.2146	0.290	0.0282	0.471
12	-0.3969	0.080	-0.5438*	0.022	-0.1894	0.258	-0.3969	0.080
13	0.7473***	0.000	0.3742	0.069	0.8164***	0.000	0.7473***	0.000
14	0.2106	0.280	UNCALC	-----	0.2106	0.280	0.2106	0.280
15	0.6033**	0.015	0.1798	0.278	0.5133*	0.036	0.4821	0.048
16	-0.6647**	0.009	-0.5306*	0.038	-0.5627*	0.028	-0.6641**	0.009
17	0.2257	0.229	0.0742	0.405	0.1592	0.302	0.1342	0.331
18	-0.1068	0.371	-0.1151	0.361	0.1695	0.299	-0.7211	0.413
19	0.3263	0.127	0.3215	0.131	0.1981	0.249	0.3718	0.095
20	-0.3500	0.121	0.0246	0.468	-0.8083***	0.000	-0.3500	0.121
21	0.2049	0.285	-0.2566	0.237	0.3679	0.148	0.0761	0.417
22	UNCALC	-----	UNCALC	-----	UNCALC	-----	UNCALC	-----
23	0.1651	0.362	UNCALC	-----	0.1651	0.362	0.1651	0.362
24	-0.3821	0.110	-0.5591*	0.029	-0.3231	0.153	-0.3951	0.102
25	-0.0382	0.448	-0.2262	0.218	0.1378	0.319	0.0489	0.434
26	-0.1659**	0.029	-0.6035*	0.032	UNCALC	-----	-0.6035*	0.032
27	0.1284	0.362	0.1098	0.381	-0.1705	0.319	0.1491	0.341
28	-0.0378	0.447	-0.0775	0.392	-0.0859	0.380	-0.0533	0.425
29	0.4740	0.051	UNCALC	-----	0.4740	0.051	0.4740	0.051
30	0.1304	0.343	0.2126	0.253	0.1951	0.272	0.1956	0.271
31	-0.4379	0.089	-0.4626	0.076	-0.3326	0.159	-0.3434	0.515
32	0.0714	0.396	0.4517	0.061	-0.1146	0.355	0.0911	0.384
33	-0.3791	0.157	0.1403	0.359	-0.5530	0.061	-0.3791	0.157
34	0.1587	0.271	0.0302	0.451	0.1840	0.240	0.2235	0.194
35	-0.2266	0.239	-0.1554	0.315	-0.2277	0.238	-0.2650	0.203

Where -

Model = Total Model

Sminstr = Sum of the Instrumentalities

Expect = Expectancy Values

Expsint = Expectancy Times the Sum of the Instrumentalities

(Prob) = The Probability of Occurrence

Uncalc = The Correlation is unable to be calculated

* = $p<0.05$

** $p<0.01$

*** $p<0.001$

24(, is the significant negative relationships with the criterion which are contained in the table. Perceived instrumentality of achieving work-related outcomes becomes more readily predictable for these farm workers, as effort levels decrease.

Subject 22's components and those of several other respondents are incalculable.

5.2.2 Description of correlational data

Results from the previous literature has in many cases relied upon the consideration of mean correlations of the tested sample, (Muchinsky, 1977; Pritchard and Sanders, 1973; Kopelman, 1977), thus facilitating a discussion of the normative nature of the data. Mean correlations for farmers and farm workers, exhibited in Table 8 for 'model' and component correlations appear very low and clustered about 0.00. The ranges are all above 1.500 for a possible field of 2.000, indicating a wide distribution of data. Hence the question of how useful the descriptive value of the mean correlations for this data, becomes relevant.

Kurtosis values for all respondents in all groups are negative indicating a flatter distribution than a normally distributed sample would produce. The skewness values do not appear very large indicating a slight deviation from the normal distribution, with farmers exhibiting a slight positive skew for all component and 'model' correlations. Farm workers, conversely show a negative skew for the 'model' and all components except the 'sum of the instrumentalities'.

The data thus appear to depart from normality, if only a little. Median values for all categories suggest a degree

TABLE 8 Descriptive Statistics for Expectancy to Effort Correlations

	Valid Cases	Mean Correlations	Median Correlations	Standard Error	Standard Deviation	Variance	Kurtosis	Skewness	Range	Minimum	Maximum
FARMERS											
E(ΣIV)	53 (n.s.)	-0.026	-0.047	0.052	0.380	0.145	-0.439	0.127	1.676	-0.821	0.855
ΣI	44 (n.s.)	0.005	0.000	0.068	0.449	0.202	-1.037	0.013	1.625	-0.748	0.877
E	52 (n.s.)	-0.011	-0.030	0.047	0.339	0.115	-0.329	0.120	1.503	-0.711	0.792
E(ΣI)	53 (n.s.)	-0.034	-0.071	0.053	0.388	0.151	-0.329	0.118	1.700	-0.803	0.898
FARM WORKERS											
E(ΣIV)	34 (n.s.)	0.005	0.017	0.070	0.410	0.168	-0.676	-0.083	1.605	-0.858	0.747
ΣI	31 (n.s.)	-0.059	-0.075	0.075	0.416	0.173	-1.048	0.220	1.605	-0.649	0.782
E	32 (n.s.)	0.076	0.150	0.074	0.421	0.177	0.290	-0.244	1.639	-0.808	0.831
E(ΣI)	34 (n.s.)	0.037	0.001	0.070	0.407	0.166	-0.632	-0.119	1.575	-0.828	0.747

of normality for the data with all being very close to the mean correlational values.

Frequencies of the correlated values for the model and components are shown in Tables 9 and 10 for farmers and farm workers respectively. The subsequent frequency polygons plotted for the farmers in Figure 2 and farm workers in Figure 3 show graphically the degree of normality the data possess. The most deviant category from the normal distributions is 'the sum of the instrumentalities', characterised by higher kurtosis scores than the rest. This is true for both farmers and farm workers. Despite this block-like distribution and the somewhat alpine distribution of the remaining categories, both Figures 2 and 3 exhibit an approximately normal distribution. This, in conjunction with the closeness of the medians to means and relatively low skew and kurtosis values for all categories, suggest the data contain sufficient normality characteristics to enable the use of mean values for descriptive purposes.

The mean correlations for the four categories for farmers and four categories for farm workers were calculated using the formula for calculation of correlational means (McNemar, 1969, p.158). Correlation coefficients r are transformed to z scores using

$$Z_{av} = \frac{\sum_{i=1}^{k} (N_i - k) Z_i}{\sum_{i=1}^{k} (N_i - k)}$$

where Z_{av} = average z score

N_i = Number of cases in i-th sample

TABLE 9 Frequencies of Correlations for Farmers

Class Interval	E(ΣIV)	ΣI	E	E(ΣI)
-1.05 - -0.96	0	0	0	0
-0.95 - -0.86	0	0	0	0
-0.85 - -0.76	1	0	0	3
-0.75 - -0.66	2	3	1	1
-0.65 - -0.56	1	3	1	0
-0.55 - -0.46	4	3	3	3
-0.45 - -0.36	2	3	5	6
-0.35 - -0.26	9	2	2	3
-0.25 - -0.16	2	3	6	5
-0.15 - -0.06	4	3	7	7
-0.05 - 0.04	5	4	5	2
0.05 - 0.14	4	3	5	5
0.15 - 0.24	7	1	6	7
0.25 - 0.34	3	4	3	3
0.35 - 0.44	6	3	4	4
0.45 - 0.54	0	5	2	1
0.55 - 0.64	1	1	0	2
0.65 - 0.74	0	1	1	0
0.75 - 0.84	1	1	1	0
0.85 - 0.94	1	1	0	1
0.95 - 1.04	0	0	0	0
Totals	53	44	52	53

N.B. Totals vary due to exclusion of incalculable correlations. See Table 5.

TABLE 10 Frequencies of Correlations for Farm Workers

Class Interval	E(ΣIV)	ΣI	E	E(ΣI)
-1.05 - -0.96	0	0	0	0
-0.95 - -0.86	1	0	0	0
-0.85 - -0.76	0	0	2	1
-0.75 - -0.66	1	0	0	1
-0.65 - -0.56	1	4	1	1
-0.55 - -0.46	1	4	1	0
-0.45 - -0.36	5	3	0	4
-0.35 - -0.26	2	1	3	4
-0.25 - -0.16	3	2	3	0
-0.15 - -0.06	2	2	2	3
-0.05 - 0.04	3	2	1	2
0.05 - 0.14	3	4	3	4
0.15 - 0.24	4	2	8	5
0.25 - 0.34	2	2	0	1
0.35 - 0.44	1	1	1	1
0.45 - 0.54	1	1	3	3
0.55 - 0.64	1	2	2	1
0.65 - 0.74	2	0	0	2
0.75 - 0.84	1	1	2	1
0.85 - 0.94	0	0	0	0
0.95 - 1.04	0	0	0	0
Totals	34	31	32	34

N.B. Totals vary due to omission of incalculable correlations. See Table 6.

FIG. 2

FREQUENCY OF CORRELATIONS FOR FARMERS

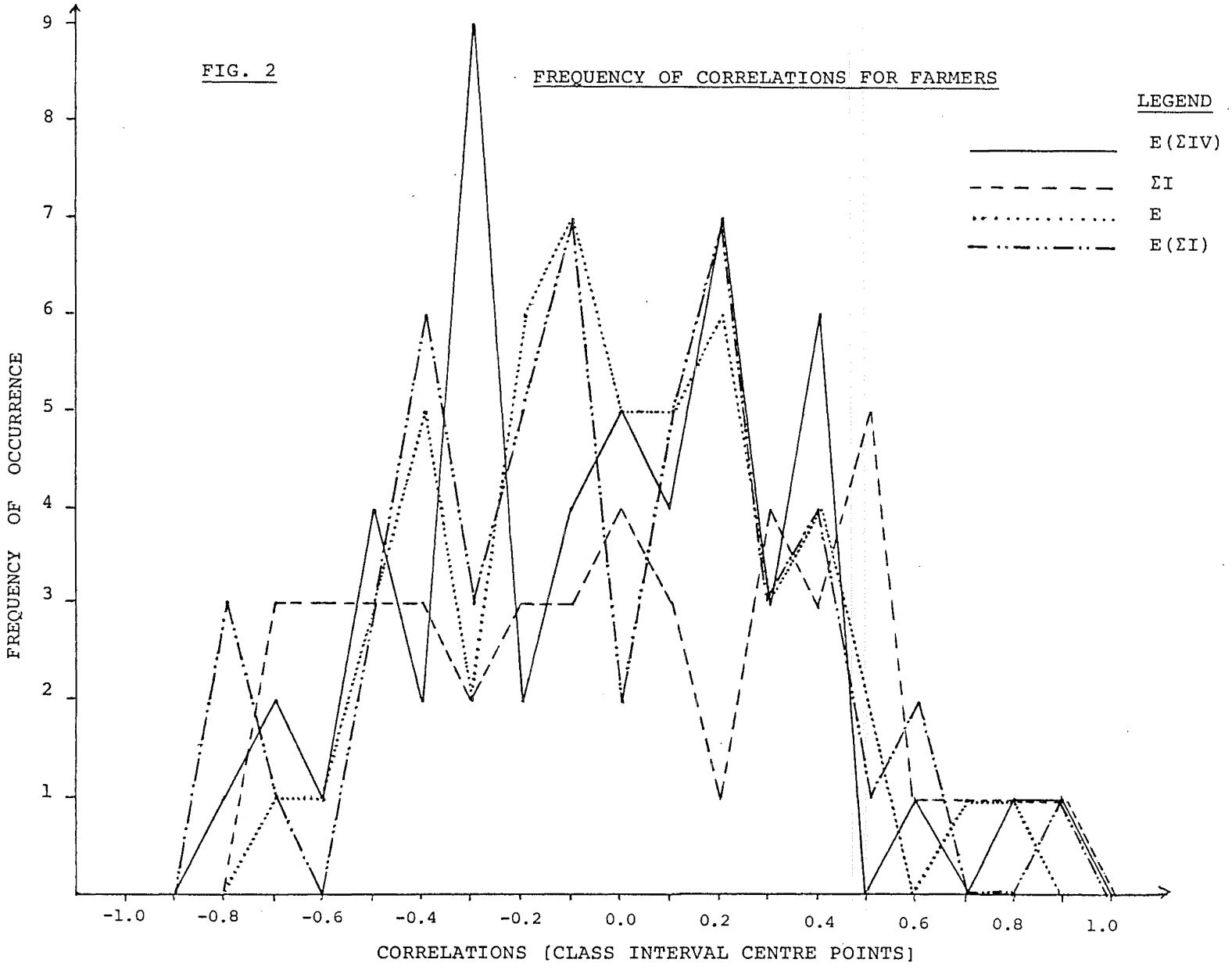
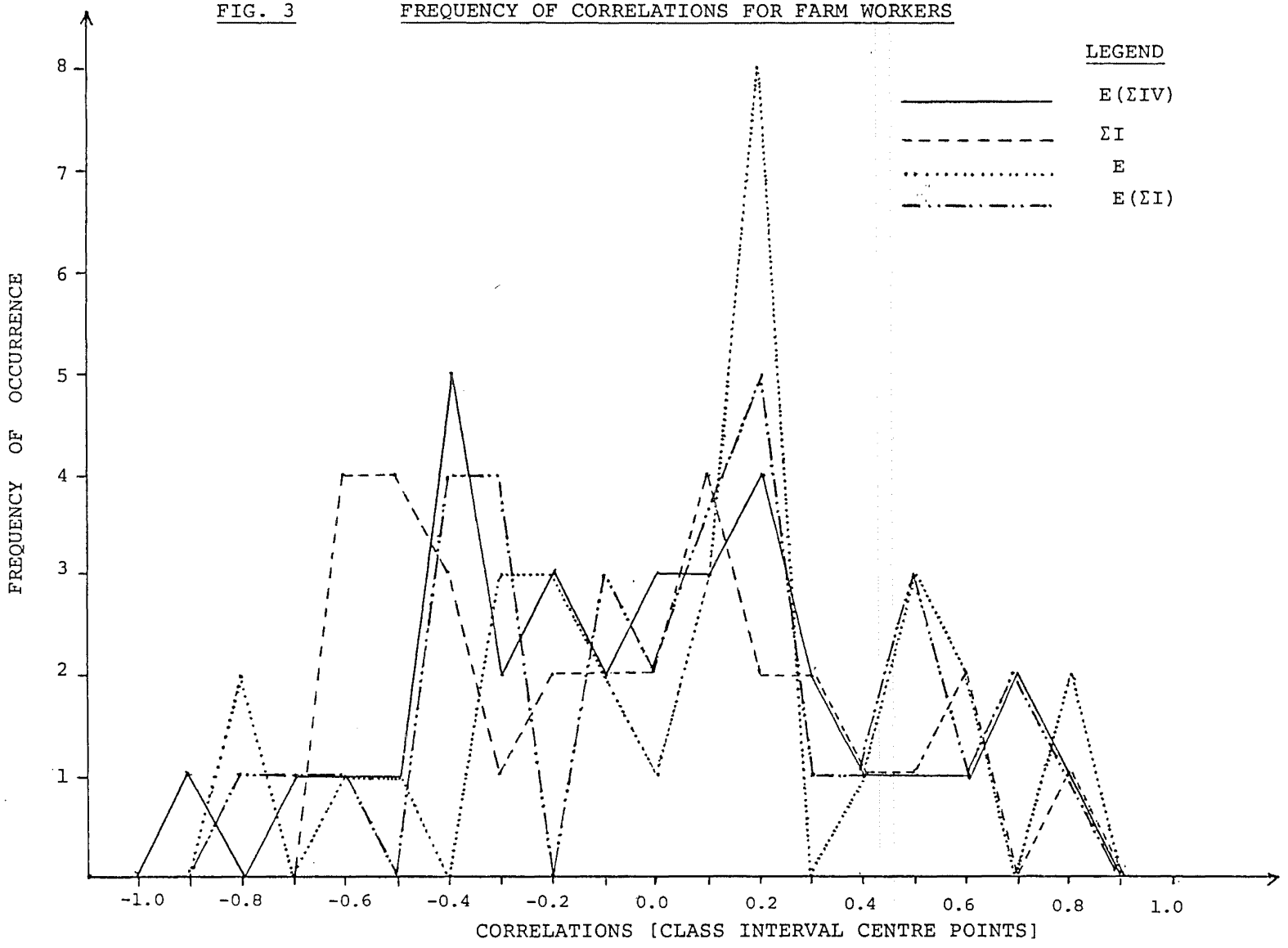


FIG. 3 FREQUENCY OF CORRELATIONS FOR FARM WORKERS



Z_i = z transformation of i-th correlation

k = Number of cases in calculation

The Z_{av} is then transformed back to an r value. This transformation accommodates any extreme normality discrepancy the data distribution may contain.

As mentioned, the mean correlations for all categories cluster about 0.000, ranging from -0.034 for the 'expectancy multiplied by the sum of the instrumentalities' for farmers to 0.076 for the 'expectancy' component in the farm worker sample.

The t-test for significance of correlation coefficients (McNemar, 1969, p.156), given by the formula

$$t = \frac{\bar{z}_{av}}{\sqrt{(1-z_{av}^2)\ (N-2)}} \qquad d.f. = N-2$$

where

t = t score

z_{av} = average z score

N = number of cases

showed that none of the mean correlations for any category of farmers or farm workers differed from zero by anything more than a chance deviation.

The mean correlations for farmers were negative with the exception of the 'expectancy' mean. Conversely, farm worker means are all positive apart from the 'sum of the instrumentalities' mean. The significance of the difference between two correlation coefficients as described by Ferguson (1966, p.187), was calculated between the 'model' and components of the farmers, and the 'model' and components of farm workers. The formula was as follows;

$$z = \frac{z_{r1} - z_{r2}}{\sqrt{1/(N_1-3) + (N_2-3)}}$$

where

z = z transformation

z_{ri} = z transformation of i-th correlation

N_i = number of cases

None of the four differences tested reached significance indicating farmers and farm workers are virtually similar samples drawn from essentially the same population.

Table 11 considers the sampling distribution of the correlation coefficients for all categories of respondents. Calculated in accordance with Ferguson (1966, p.186), the confidence intervals shown allow limited generalistaion to the population from which the samples are drawn.

TABLE 11 Sampling Distributions of the Correlation Coefficients of Four Expectancy Categories for Farmers and Farm Workers

Sample	95% Confidence Intervals
Farmers	
E(ΣIV)	-0.291 - 0.243
ΣI	-0.291 - 0.300
E	-0.283 - 0.263
E(ΣI)	-0.298 - 0.236
Farm Workers	
E(ΣIV)	-0.335 - 0.342
ΣI	-0.404 - 0.301
E	-0.280 - 0.413
E(ΣI)	-0.261 - 0.330

where

E = Expectancy

I = Instrumentality

V = Valence

For example from Table 11 we can assert with 95 per cent confidence that the population value of the correlation coefficient for the 'model' with self rated effort for farmers will fall within the limits of -0.291 to 0.243.

All confidence limits calculated are quite low, indicating little prediction ability is possessed by farmers and farm workers in achieving work-related outcomes of behaviour.

In summary, apart from a few isolated cases in both farmers and farm workers, little significance exists in the correlations of the model and components to the self rated criterion. Mean correlations are all near zero and non significant. No differences exist between either occupational group or between the total model formulation and components of the model. Although population generalisations appear tenuous these would fail to produce significant correlations.

5.3 CONTENT ANALYSIS

5.3.1 Work Related Outcomes

Section three of the questionnaire requested respondents to create a list of 10 factors, or characteristics of their jobs as farmers and farm workers, which motivate them to work the way they do. The number of outcomes presented per respondent is shown in Table 12.

A one way analysis of variance showed there was no significant difference between the number of outcomes returned for farmers and farm workers, ($F=0.275$, d.f. = 1,98).

TABLE 12 Frequencies of Outcome Numbers for Farmers and Farm Workers

Outcome Number per questionnaire	Number of Responses Farmers	Number of Responses Farm Workers
10	35	25
9	3	4
8	7	3
7	6	3
6	3	4
5	2	2
4	2	-
3	1	-
Total	59	41

Mean No. outcomes/farmer = 8.71
Standard deviation = 1.87

Mean No. per farm worker = 8.90
Standard deviation = 1.62

A one way analysis of variance showed there was no significant difference between the number of outcomes returned for farmers and farm workers, ($F=0.275$, d.f.=1, 98).

Farmers returned a total of 45 factors which motivate them to work. These are listed in Table 13 with the frequencies of factor choice among farmers. Farm workers returned a slightly higher number of outcomes (in total), producing a list of 51 outcomes, (see Table 14).

A comparison of the most frequently chosen outcomes for farmers and farm workers is exhibited in Table 15. Choice by at least 30% of the sample is required for the outcomes to be included. The mean valence and standard deviation of the valences are presented in Table 15. The per cent of sample choosing each factor is also presented.

TABLE 13 Frequencies of Outcome Occurrence for Farmers (Number of farmers = 59)

	Outcome	Number of Cases
1.	The need for money	47
2.	Working with stock	30
3.	Job satisfaction	27
4.	Enjoy a farming lifestyle	27
5.	Being your own boss	26
6.	Providing for the family	24
7.	To maintain and develop the land	22
8.	Enjoyment of the outdoor life	21
9.	Financial security	19
10.	Self satisfaction	18
11.	The will to succeed	16
12.	Providing an inheritance for the children	16
13.	The challenge of management	14
14.	Improvement of stock	14
15.	To pay mortgage and other money commitments	13
16.	To provide for retirement	12
17.	Providing a good home for the family	11
18.	Seasonal characteristics and demands	10
19.	Enjoyment of working	10
20.	To keep fit and healthy	10
21.	Pride in work and position	10
22.	To be efficient	9
23.	Produce maximum production	8
24.	To do better than last year	8
25.	Competition with the neighbours	8
26.	To keep up to date	8
27.	Battling nature	7
28.	A holiday once a year with the family	6
29.	Educating the children	6
30.	The diversity of the job	6
31.	Love of the land	6
32.	Enjoy machinery involvement	5
33.	A fear of failure	5
34.	Able to work with the wife and children	5
35.	Community involvement	4
36.	Filling in the day	4
37.	Only qualified as a farmer	4
38.	Patriotism - reduce overseas deficit	3
39.	No unions	1
40.	Perks of farming	1
41.	To be an equal working partner	1
42.	Budgeting	1
43.	To compete successfully in a man's world	1
44.	Because the jobs need doing	1
45.	To keep peace in the partnership	1

The farm workers frequency of communality is exhibited in Table 14.

TABLE 14 The Frequencies of Outcome Occurrence for Farm Workers

(Number of farm workers = 41)

	Outcome	Number of Cases
1.	The need for money	29
2.	Love of the outdoor life	29
3.	Job satisfaction	20
4.	To gain experience and education	20
5.	Flexible working hours	17
6.	An interest in farming	17
7.	The variety of work	16
8.	Working with stock	15
9.	To own own property	14
10.	Pride in work	11
11.	A good employer	10
12.	Responsibility - involvement in decisions	10
13.	Self satisfaction	10
14.	A good environment for the family	9
15.	To fill in time doing something you enjoy	8
16.	A commitment to the family	7
17.	Provide for retirement	7
18.	Working without supervision	6
19.	Working with dogs	6
20.	The challenge of building and development	6
21.	A sense of duty to stock	6
22.	To avoid collecting the dole	6
23.	Operating and maintaining machinery	6
24.	Good pay	6
25.	A need to succeed	5
26.	Enjoy physical work	5
27.	Competition	5
28.	Perks - use of farm facilities	5
29.	Don't enjoy city life	5
30.	To keep fit and healthy	4
31.	The privacy of working on your own	4
32.	Living in a good home	4
33.	The seasonal challenges	4
34.	The challenge of trying to improve stock	3
35.	The weather	3
36.	An opportunity to display confidence	3
37.	A test of one's judgement	2
38.	Lack of monotonous life	2
39.	Community involvement	2
40.	Involvement in a constantly changing field	2
41.	Growing seeds and plants	2
42.	Don't know any other jobs	2
43.	Patriotism - contribute to the economy	2
44.	To own a reliable car	1
45.	Curiosity	1
46.	The hereditary nature of farm status	1
47.	Hunting	1
48.	Farm forestry	1
49.	Working from home	1
50.	Ease of finding a new job	1
51.	Flexible holiday times	1

TABLE 15 Most Frequently Chosen Outcomes for Farmers and Farm Workers

Outcome	Mean Valence	Standard Deviation	Per cent of Sample
FARMERS			
The need for money	1.30	1.97	79.67
Working with stock	1.90	1.89	50.85
Job satisfaction	2.30	0.91	45.76
Enjoy a farming lifestyle	2.19	0.92	45.76
Being your own boss	2.12	1.11	44.07
Providing for family	2.92	1.08	40.68
Desire to maintain and develop land	1.50	1.74	37.29
Enjoyment of outdoor life	1.71	1.06	35.59
Financial security	1.42	1.84	32.20
Self satisfaction	1.72	1.36	30.51
FARM WORKERS			
The need for money	1.21	1.67	70.73
Enjoy the outdoor life	2.31	0.75	70.73
Job satisfaction	2.40	0.73	48.78
Experience and education	1.70	1.10	48.78
Flexible working hours	1.76	1.06	41.46
Interest in farming	2.06	1.11	41.46
Variety of work	2.06	1.09	39.00
Working with stock	2.47	0.72	36.58
To own own farm	2.86	0.32	34.15

The farmers and farm workers who were tested, work the way they do to attain various common outcomes. 'The need for money', 'job satisfaction', 'working with stock' and the 'enjoyment of the outdoor life' are the most common joint outcomes. Both groups rate 'the outdoor life' with reasonably high valences, as they do with 'working with stock'. 'The need to make money', although the most popular work outcome for both groups rates a moderate valence.

Farmer specific outcomes are 'being your own boss', 'providing for the family', and 'financial security'. Farm workers seek 'experience and education', value the 'flexible working hours' and desire their 'own property'. This last outcome, although being chosen by only 34% of the farm working sample, exhibits the greatest valency rating.

Both samples possess a few outcomes recognised by at least 70% of the respective samples (one for farmers and two for farm workers). From this point the consensus drops to the 30 to 50 per cent region.

5.3.2 Jobs of the Respondents

A master list of jobs done by the sample of farmers and farm workers is shown in Table 16. The first 13 jobs comprise the core list which had been included in the questionnaire as a result of a pilot study. Subsequent jobs were obtained from respondents' replies.

An analysis of the number of jobs listed in Table 16, which are normally carried out by each group, is presented in Table 17.

TABLE 16 Jobs Master List for Farmers and Farm Workers

1.	Mustering*
2.	Sheep shearing and crutching*
3.	Sheep yard work*
4.	Lambing*
5.	Calving*
6.	Cattle yard work*
7.	Fencing*
8.	Tractor work*
9.	Harvesting*
10.	Hay making and carting*
11.	Feeding out*
12.	Irrigation*
13.	Wood cutting*
14.	Office work
15.	General maintenance
16.	Machinery maintenance
17.	Building/engineering
18.	Management
19.	Farm forestry
20.	Home work and killing
21.	Picking stones
22.	Grubbing thistles/spraying
23.	Burning off
24.	Goat work
25.	Contracting
26.	Milking
27.	Painting
28.	Blacksmithing
29.	Cartage
30.	Silage cutting
31.	Wool classing
32.	Pig work
33.	Top dressing
34.	Deer work
35.	Land development
36.	Artificial insemination

* Jobs included in all questionnaires based on pilot study results (see Chapter 4).

TABLE 17 Frequencies of Numbers of Jobs done by Farmers and Farm Workers

Number of jobs	Number of farmers	Number of farm workers
18	1	0
17	0	1
16	2	2
15	1	1
14	8	5
13	6	8
12	9	8
11	8	7
10	12	6
9	5	5
8	8	2
7	2	2
6	0	0
5	1	0
4	1	0
Total	64	47
	Mean No. = 10.98	Mean No. = 11.62
	Standard deviation = 2.62	Standard deviation = 2.28

The mean number of jobs reported as comprising a farmer's position is 10.98 (s.d. = 2.62), per farmer. The farm worker mean is 11.62 (s.d. = 2.28). It would appear a farm worker's job contains slightly greater variety than that of his employer. This is only a trend evident in the sampling as a one way analysis of variance shows no significant difference in the number of jobs farm workers do in relation to farmers ($F=1.61$, d.f.=1,109).

The effort which the respondents perceived would be required to complete each job was combined for both groups.

Jobs indicated as being completed by at least 30% of respondents were tabulated and ranked according to mean amounts of effort expenditure. As can be seen from Table 18 there exists very little difference between farmers and farm workers regarding the perceived amount of effort jobs require for completion. The rank ordering and effort levels are virtually the same for both groups. A Pearson's r correlation coefficient of $r=0.89$, ($p<0.001$), indicates a high relationship between the effort levels of both groups. Similar gradients of perceived effort levels in Figure 4 emphasise how closely farmers and farm workers rate their jobs. Farm workers tend to vary a little more than farmers in their estimations.

For the sampled agricultural workers, sheep shearing and crutching yield the greatest effort prediction, with the mean effort output predicted as 88% for farmers and 84% for farm workers. Hay making and carting, sheep yard work and lambing are the next most effort demanding. Farm workers, however, rate fencing before these three while farmers consider fencing effort below the three mentioned. Feeding out and calving receive the lowest perceived effort requirements for both groups. Mean effort levels in these jobs are in the 45 to 50 per cent range.

A further rank ordering of jobs was considered with desirability as the criterion. A summation and mean ranking was obtained for both groups and the results are presented in Table 19. Again a 30 per cent consensus was required within each group.

The first six ranks for both groups show the same job in the same order indicating no differences in

TABLE 18 Perceived Job Effort Levels for Farmers and Farm Workers

Rank	Job	Mean	Standard Deviation	Per cent of Sample
FARMERS				
1	Sheep shearing & crutching	88.51	16.34	61.90
2	Hay making and carting	79.67	19.08	77.77
3	Wood cutting	70.00	23.85	88.89
4	Lambing	69.63	23.88	90.48
5	Sheep yard work	67.76	20.87	92.06
6	Fencing	67.38	20.56	95.24
7	Harvesting	60.48	21.93	33.33
8	Cattle yard work	55.49	19.44	65.08
9	Mustering	51.95	24.99	87.30
10	Calving	51.32	23.68	53.97
11	Feeding out	50.17	22.70	82.54
12	Tractor work	46.19	22.06	85.71
FARM WORKERS				
1	Sheep shearing & crutching	84.31	18.57	69.57
2	Fencing	73.56	21.82	93.48
3	Hay making and carting	71.20	22.66	86.96
4	Sheep yard work	67.70	19.27	95.65
5	Lambing	67.60	25.11	97.83
6	Wood cutting	67.52	24.43	91.30
7	Cattle yard work	63.75	19.28	69.57
8	Mustering	59.90	27.41	86.96
9	Harvesting	56.67	26.83	45.65
10	Calving	53.83	21.24	65.22
11	Tractor work	48.19	27.70	78.26
12	Feeding out	46.10	23.22	84.78
13	Building & engineering	41.25	23.82	34.78

FIG. 4 Perceived Job Effort for Farmers and Farm Workers

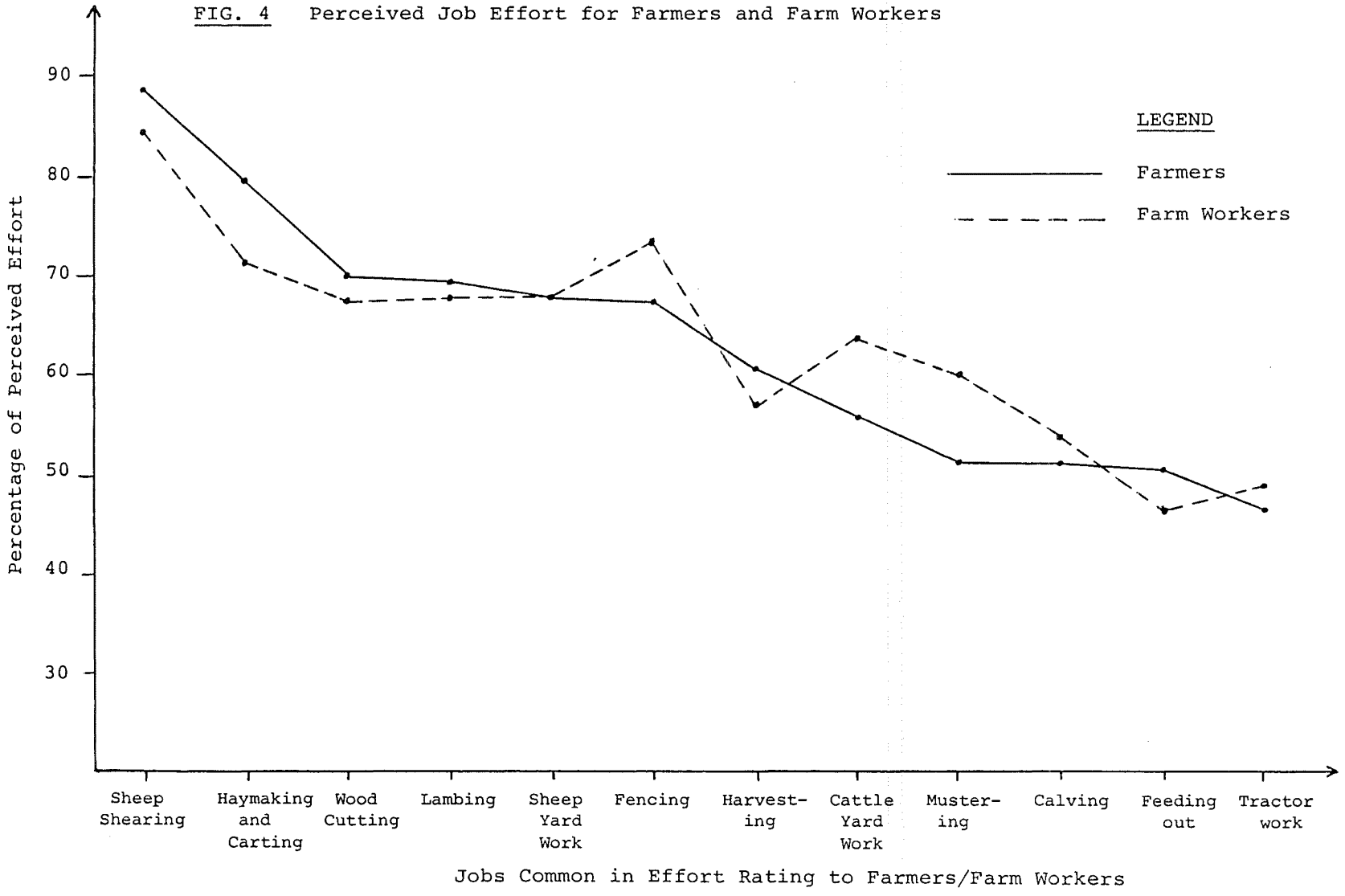


TABLE 19 Desirability Ranks for Farmer and Farm Worker Jobs

	Job	Average rank
FARMERS		
1.	Mustering	2.62
2.	Lambing	4.53
3.	Sheep yard work	5.10
4.	Calving	5.39
5.	Cattle yard work	5.58
6.	Fencing	5.78
7.	Tractor work	5.80
8.	Harvesting	6.80
9.	Feeding out	7.36
10.	Sheep shearing & crutching	8.22
11.	Hay making and carting	8.58
12.	Wood cutting	9.45
FARM WORKERS		
1.	Mustering	2.33
2.	Lambing	4.95
3.	Harvesting	5.42
4.	Sheep yard work	5.58
5.	Calving	5.85
6.	Cattle yard work	6.04
7.	Tractor work	6.14
8.	Building/engineering	6.21
9.	Fencing	6.59
10.	Sheep shearing and crutching	6.93
11.	Irrigation	7.38
12.	Feeding out	7.60
13.	Hay making and carting	7.80
14.	Wood cutting	10.18

desirability rankings between farmers and farm workers. The difference in average rank assigned to each job (shown in Figure 5) exhibits some agreement on desirability with general gradients being quite similar. The only job farm workers prefer doing which farmers don't is 'irrigation'.

As an indication of any relationship between perceived effort ratings and desirability of farm jobs, the consecutive rankings of both features were plotted. Figure 6 indicates the farmers' relationships and Figure 7, the farm workers' relationships. If a connection does exist it would be reasonable to assume that the greatest effort demanding job would be the least desirable. Conversely, the least effort demanding job would be the most desirable.

Farmers (Figure 6), shows some evidence for this prediction. Sheep shearing, hay making and wood cutting specifically were ranked as the top three for effort expenditure and these jobs secure the lowest rankings for job desirability. Mustering, which was liked the best, requires the fourth to greatest perceived amount of effort expenditure.

Farm workers (Figure 7), exhibit similar trends. In addition, wood cutting, the least desired job, requires moderate effort to complete.

In summary, the motivating outcomes are similar for both farmers and farm workers. Basically intrinsic in nature they involve land and job orientated features. Jobs done by both groups again show no occupational difference. The most common jobs resemble the list provided in the questionnaire. Desirability and effort rankings are similar for both groups. A slight relationship is evident between desirability and effort expenditure.

FIG. 5 Job Desirability for Farmers and Farm Workers

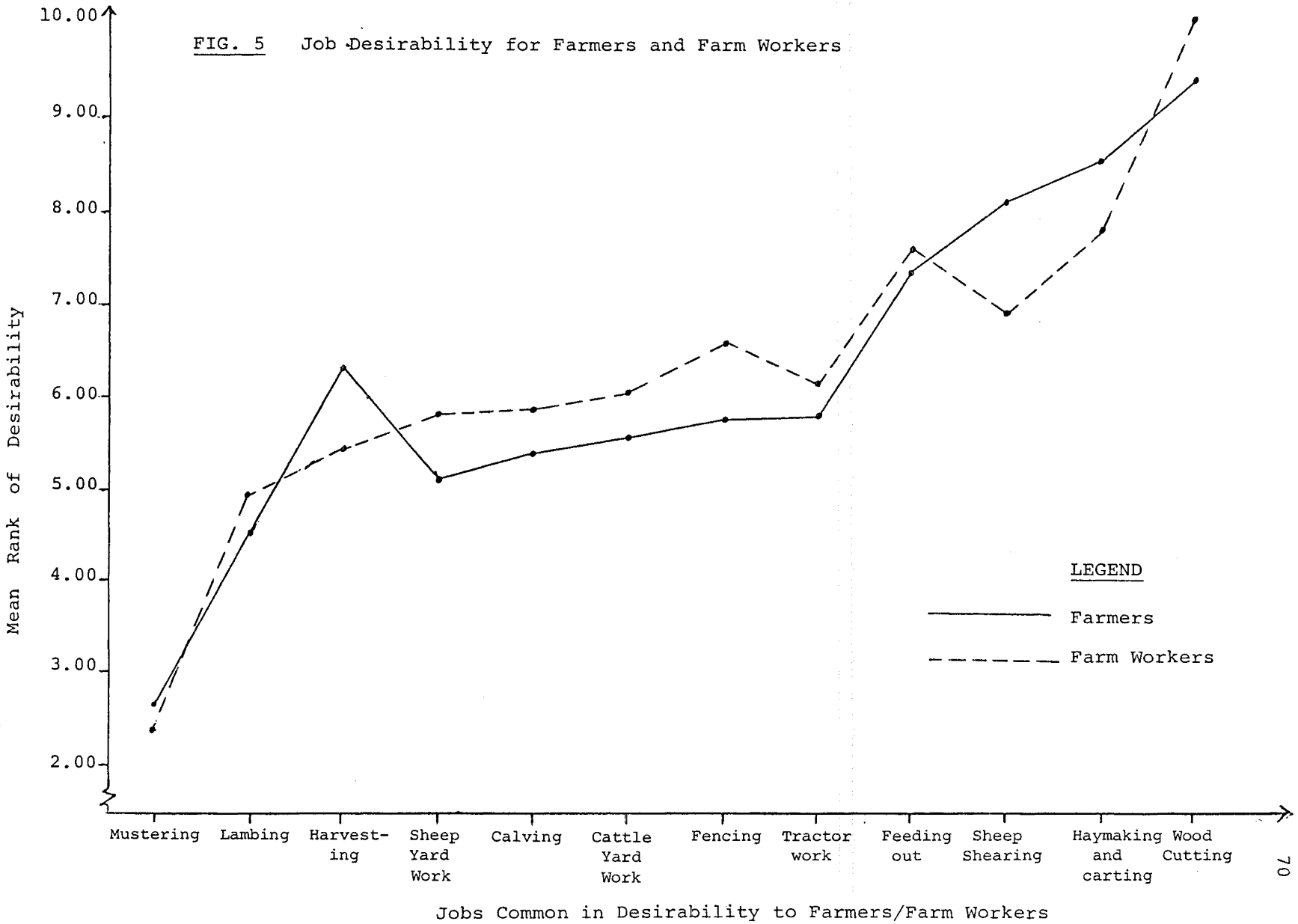


FIG. 6 Relationship of Perceived Effort and Desirability of Farmers Jobs

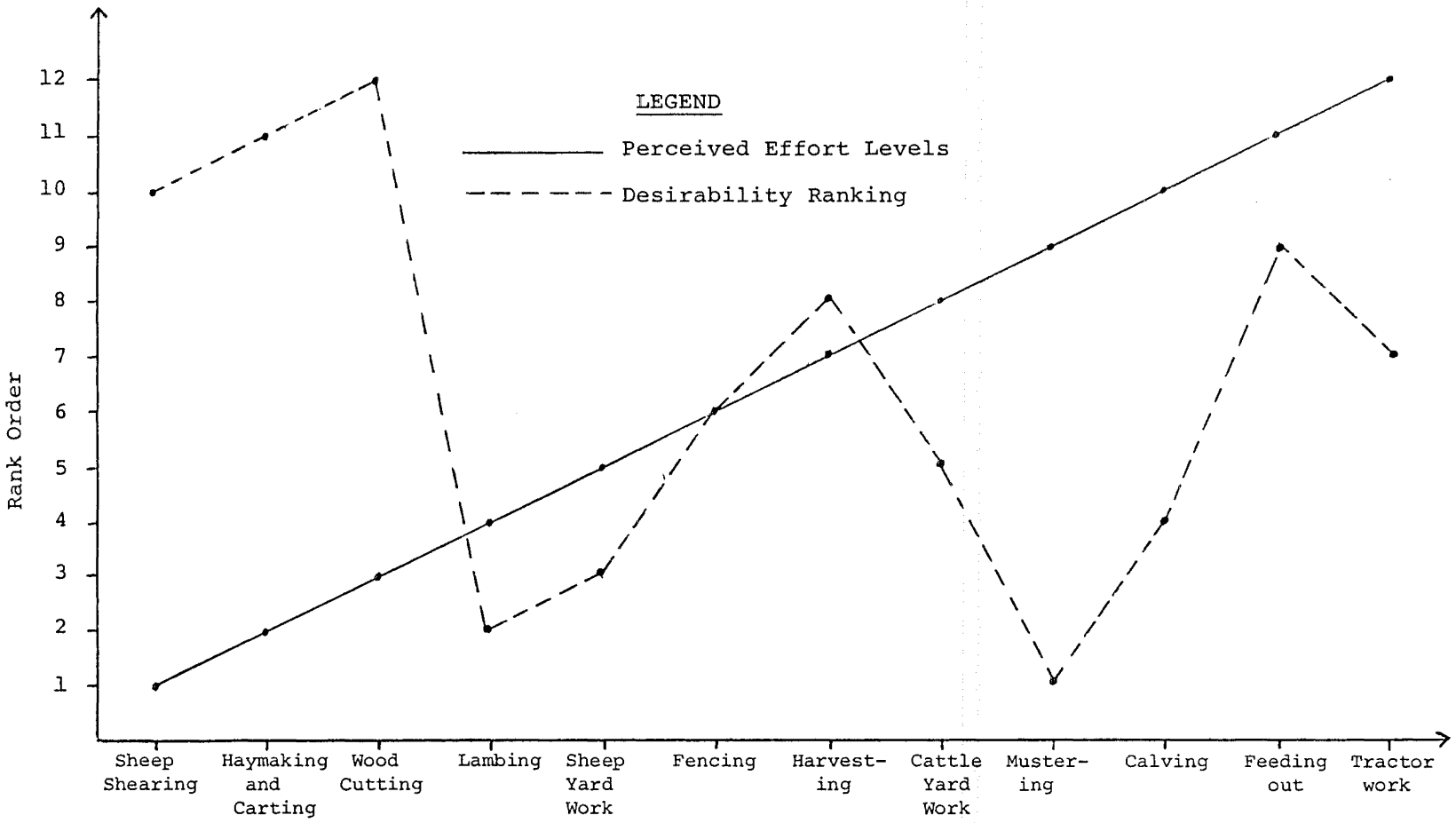
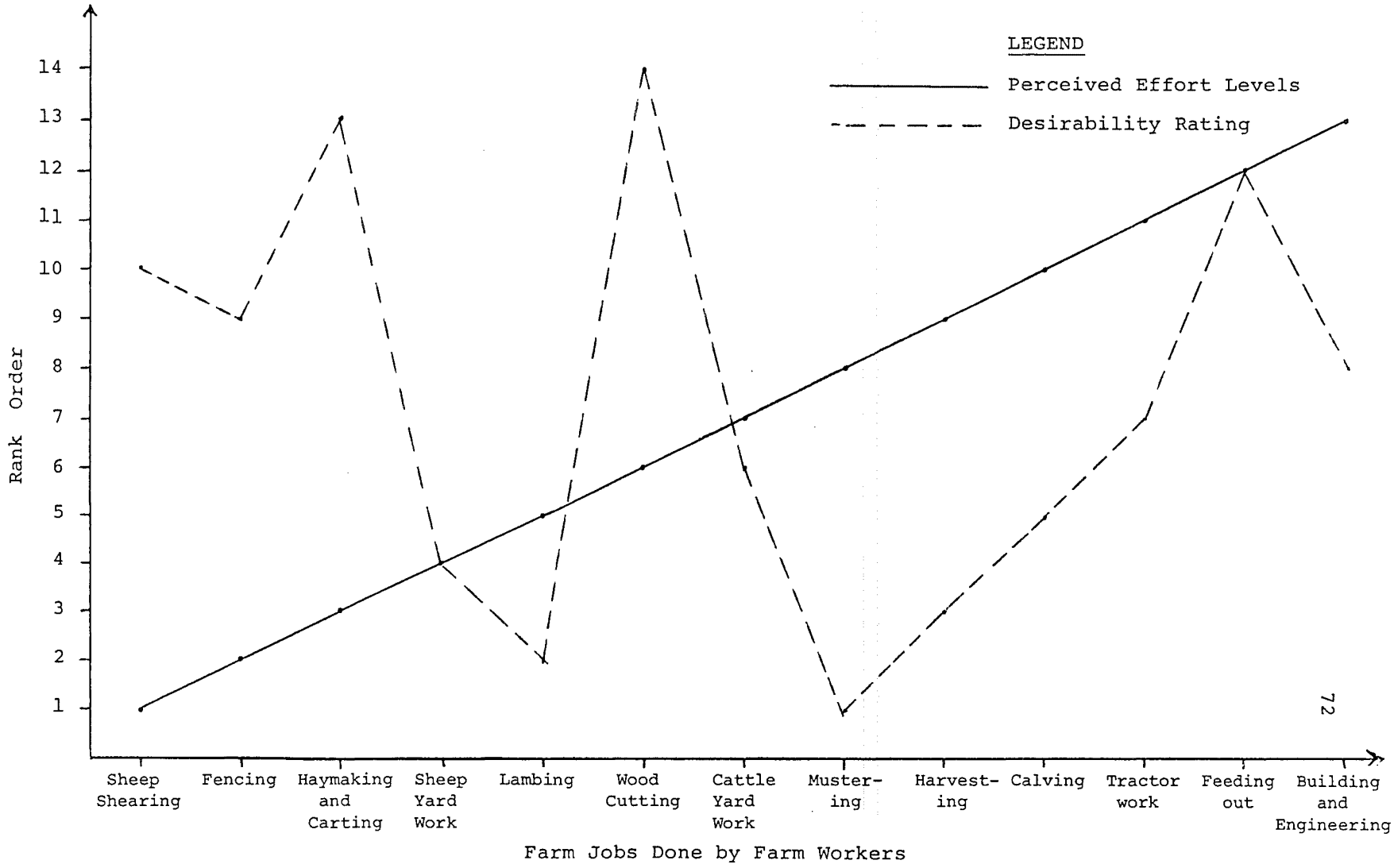


FIG. 7 Relationship of Perceived Effort and Desirability of Farm Workers Jobs



CHAPTER SIX

DISCUSSION OF RESULTS

The discussion of results will consist of four sections; first, the motivation of farmers and farm workers as revealed through an Expectancy/valence perspective, second the validity of the model's application to a rural sector and third, discussion of the content analysis as it bears on agricultural motivation. The final section of the results discussion considers the study's limitations.

6.1 AN EXPECTANCY/VALENCE PERSPECTIVE OF AGRICULTURAL MOTIVATION

Very clearly, the results indicated no differences between farmers and farm workers. In all comparisons made, including individual correlations, mean group correlations and sample distributions, no significant difference between the groups was distinguishable. As indicated earlier, the two groups were characteristic of two samples drawn from the same population. The only discriminating feature is the defining variable, i.e. their ownership status in terms of the property on which they work.

Thus within the parent population, there is the apparent similarity of job descriptions and polarity of job titles. Unlike an urban factory situation where employers and/or owners may assume managerial roles, and the consequential isolation from the employees, employers or

owners of farms carry out the same duties as their employees. Employees are engaged, as the same job typically requires more than one person to ensure its successful completion. Being a farming employer does not, in general, mean promotion to an exclusively managerial role except in the case of very large holdings. As a result, the farmer/ farm worker distinction is often quite arbitrary in terms of defining behavioural clusters. However, the analysis considered the groups independently and in retrospect this may have been an unnecessary distinction.

The most obvious feature to emerge from the results is the extremely small number of significant correlations in the relationships which were analysed. Of 90 subjects, only 15 respondents had a significant correlation between the motivation model and self ratings of effort. The remaining 75 subjects were unable to predict the perceived amount of effort required to complete their farm jobs in order to obtain their desired outcomes of work behaviour.

A low number of significant correlations does not appear to warrant great importance in previous literature. Muchinsky (1977), presented 27 subjects' correlations with a model and components similar to those used in this study. Three of his subjects achieved significant 'model' to criterion correlations, 13 significant 'expectancy' to criterion correlations, and only four 'expectancy multiplied by the sum of the instrumentality' to criterion correlations. Despite this low number he quotes mean correlations (which were insignificant), which are comparable with others in the literature, (Pritchard and Sanders, 1973). His mean correlations quoted in Table 2, see Chapter 2.3, appear high. However, investigation of the number of cases for each

correlation shows N's ranging from three to seven with a mode of five. Hence the correlation coefficients, although high, remain insignificant.

Misleading results such as these plague the Expectancy/valence literature and serve to confound evidence in support of the model (Campbell and Pritchard, 1979).

Low numbers of significant correlations characterise this study's subjects. As a whole the sample has low and insignificant correlations with the criterion. The means of the groups' correlations with the criterion are all around the zero point, the range being from -0.06 to 0.08.

Prior to discussing these mean values, some justification for the consideration of the distribution of the subjects' correlations is necessary.

The approach to analyse of Expectancy/valence tests within much of the literature, is to correlate the results from several subjects with a criterion (in the case of a between-subject methodology) or to correlate various motivational forces with a criterion for each subject (for within-subject analysis). Regardless of which research design, mean correlations provide the usual basis for analytical discussions and conclusions, (Campbell and Pritchard, 1979; Mitchell, 1974; Connolly, 1976).

The applicability of the mean as the most relevant descriptive statistic depends on the distribution of the data and may indicate the need for some transformation of the data. Frequently this is not done. In this study it was apparent that the data departed somewhat from normal distribution characteristics. However, as the median values were very close to those of the correlational means, the departure from normality was not great.

> In general, the mean is not as typical as the median when there are extreme measures. However, when scores are distributed in an approximately symmetrical fashion, the mean and the median will be equal or nearly so.
>
> McNemar, 1966, p.18.

To counter as much variance as possible introduced by non-normality of the data, a z score transformation was considered necessary prior to mean calculations.

Mean correlations of around zero contradict all previous literature. Correlation upper limits are typically reported at around $\bar{r} = 0.30$, this ceiling being exceeded only in research where a self-rated criterion is utilised, (Campbell and Pritchard, 1979). None of the mean correlations in this study approached this value. Table 2, (Chapter 2.5) compares Muchinsky's (1977), and Pritchard and Sanders (1973), correlation means for model and component relationships to the criterions. Muchinsky's most powerful predictor of $\bar{r} = 0.73$ for 'expectancy' and Pritchard and Sanders $\bar{r} = 0.54$ for the 'sum of the valences', greatly exceeds those found in this study.

Not only does the model to criterion correlation fail to support the literature trends, but there is also no distinction between model and component prediction levels.

The correlations in this study show no relationship between perceived amounts of effort to successfully execute farm jobs and the ability of the sample to predict these effort levels. The 95% confidence intervals calculated in Table 11 (Chapter 5), for the sample distribution of mean correlations allow minimal generalisation to the farming population from which the sample is drawn. At its optimum, we may assert with 95% confidence that the model means will

fall within the range -0.30 to 0.24 for farmers. This is a very low correlation and in line with the sample results.

For farmers and farm workers the Expectancy/valence model has failed to show predictive ability except in a small number of isolated cases, and of these half show negative relationships.

6.2 THE VALIDITY OF THE EXPECTANCY/VALENCE MODEL IN RURAL JOBS

The characteristic nature of a farming existence could be the main reason for the lack of relationship among the components of the model. Unlike urban jobs where commonly a weekly wage or salary is paid on a fixed interval schedule, despite fluctuations in production, the farmer's income is subject to many uncertainties. Only after the completion of seasonal production, such as fat lambs for slaughter, or shearing, does a farmer receive payment. Subsequently, his conception of the expectancies which various jobs contribute to his success as a farmer, may be difficult to assess. Consider the job 'fencing'. It requires considerable expense to erect a fence, but it has little apparent direct economic return. It keeps stock confined to certain areas with varying degrees of nutritional value, thus giving a probable greater monetary return post slaughter. It saves time, during mustering. It allows better control in bad weather conditions during lambing, thus increasing lambing percentages. The indirect value of the fence is finally defined via many direct production indicators. Conceptualisation of such a job, and many with similar characteristics, is difficult to

assess with regard to expectancy and instrumentality measures. The job assumes the characteristics of an instrumentality which according to the Expectancy/valence model subsequently must be related to an outcome in the form of a further instrumentality. Conceptual differentiation difficulties become apparent.

Following this argument, the variable interval schedule of monetary reinforcement of farmers may generate a different Expectancy/valence result for the same person on a fixed interval reinforcement such as a farm worker. Yet this is not the case as farm workers produce the same Expectancy/valence result as do farmers.

The failure of the model however, seems to result from the unique characteristics of a farmer's position. With this in mind we now consider what were termed "incalculable correlations" in the present study.

Essentially, subjects who exhibit an incalculable component show an inability to differentiate the contributory value of the various components. In the case of the 'sum of the instrumentalities' an incalculable correlation results from the respondent viewing each job as equally instrumental in attaining the various outcomes of work behaviour. To this respondent, there is no discrimination among the job instrumentalities in the positions they occupy.

A closer look at the nature of the jobs farmers and farm workers do in relation to the outcomes of work behaviour provides some insight on this problem.

The desired outcomes of work behaviour were very similar for farmers and farm workers. The farm workers produced a master list containing greater variety, if only marginally.

The adjusted lists featured in Table 15 (Chapter 5), show the most sought after outcomes. A 30% consensus was considered as the cut-off point for these outcomes. Below this level numbers of subjects exhibiting common outcomes dropped too low to be usable.

The list of outcomes exhibiting the greatest consensus is in an ungrouped state, (Table 15, Chapter 5). No categories appearing to be related or facts of an underlying dimension were combined. One could have combined outcomes with a common underlying theme. To use money as an example, 'the need for money', 'financial security', 'to pay mortgage and other financial commitments' and possibly 'a holiday once a year' could have been calculated as a single financial outcome. However, distinctions were made by respondents in many of the responses to these specific outcomes. The mean valence for the 'need for money' was 1.30 for farmers, a moderate level indicating it is only mildly attractive because it is a necessity. The same respondent in many cases had 'the need for money', 'financial security' and 'a holiday' as three separate outcomes. Rather than view them as first and secondary outcomes of a more general outcome, they appeared to be viewed as being separate.

Having interviewed almost half of the sample, the author noted the reoccurring feature that farmers claimed to be in the business of farming in today's climate because of the 'way of life' commitment, and not for 'the money'. Many farms are not very profitable at present, hence the need for money and financial security (necessary states of existence), were defined as distinct from 'to make money', (an optional and unnecessary outcome).

Outcomes can be considered as intrinsic or extrinsic. Intrinsic outcomes are those rewards derived from within the

individual, such as feelings and emotions. Extrinsic outcomes adopt more materialistic characteristics such as money.

Ten outcomes were most desired by farmers, six were intrinsic in nature. These were working with stock, job satisfaction, enjoy farming lifestyle, being your own boss and self satisfaction. These were also shared by farm workers. The differing outcomes pertaining solely to farm workers were 'enjoyment of the outdoor life' and to 'gain experience'. The trend to emerge is the strong intrinsic nature of both farmers' and farm workers' desired outcomes.

It is the intrinsic nature of these outcomes and their relation to the jobs they do that makes this sample somewhat different to those reported in the literature. The jobs provide the unit of analysis in this study as each has attached a differing perceived effort level required to satisfactorily complete the job.

Possibly the intrinsic nature of the outcomes intrudes upon or is strongly related to the type of jobs to be done. As can be seen, 'enjoyment of working with stock', 'like of farming lifestyle' and 'enjoyment of the outdoor life' are desired outcomes of behaviour. Working with stock covers aspects of several jobs, including sheep yard work, lambing, and calving, to name but a few. Enjoyment of the farming lifestyle also involves several of the farm jobs, such as tractor work and harvesting.

The outcomes farmers and farm workers desire, due to the nature of their jobs, are composed of the jobs they do. The intrinsic way of life and the love of the lifestyle themes to emerge from the analysis do not clearly differentiate between jobs and outcomes.

If this is true, it is a feature which directly contravenes one of the underlying assumptions of the Expectancy/valence model, namely:

> The theory assumes independence between expectancy and valences and proposes a multiplicative interaction between them.
>
> Wahba and House, 1974, p.123.

In a farming situation the intrinsic nature of the lifestyles does not create independence between the expectancy scores of the various job and valence ratings.

Perhaps the most characteristic feature of the Expectancy/valence model of work motivation is that it is a non-linear monotonically increasing product of expectations and valences.

The relationship between the outcome valences and jobs farmers do, in that some jobs actually comprise the intrinsic outcomes of their work behaviour, means a biased and almost constant valence measure on outcomes. Farmers and farm workers virtually always find the intrinsic job-related outcomes highly valent. Hence, the valence and possibly the expectancy components of the motivational force = $E(\Sigma IV)$ relationship will be conceptualised as constants. It ceases to become a monotonically increasing function. As perceived effort levels increase the predictive ability remains constant (producing incalculable results). This interpretation would account for the results in the present study which failed to show any relationship between outcomes of work behaviour and perceived effort.

As these two assumptions are unable to be satisfied, the application of the expectancy model as formulated in this study is, in hindsight, apparently not appropriate for a rural sample. To adequately apply the Expectancy/valence

model to the agricultural sector, the various jobs each farmer and farm worker do would have to be listed. Those with identical job lists would have to be clustered into separate groups for analysis. A single motivational force score would have to be calculated for each subject in a common group, thus utilising between-subject methodology.

A standard list of outcomes of work behaviour would have to be formulated, screened and transformed. The transformation would require a coefficient attempting a 'way of life' involvement versus a 'just a job' involvement. Perhaps independent measures of valence and expectancy for each jobs contribution would then be possible.

However, this suggested form of analysis contravenes many methodological arguments advanced, if not by Vroom (1964), then by some of his successors, (Kopelman, 1977; Muchinsky, 1977; and Mitchell, 1979).

6.3 CONTENT ANALYSIS: DISCUSSION

The content analysis of this study was directed at firstly, the outcomes of work behaviour and secondly, the jobs done by farmers and farm workers.

The inclusion of intrinsic and/or extrinsic outcomes has been previously discussed.

Mean valence scores for both groups showed no negative outcomes. All have positive motivational value for the respondents.

Specification of outcome lists was not as Mitchell (1974), described, an unsolvable dilemma. The most popular method of specification to emerge from the literature was utilised, namely subject generation. This seemed to be the

only valid approach in a within-subject methodology.

Although the outcomes were many and varied for individual farmers and farm workers, a consensus of most desired outcomes supports the approach to outcome specification which was adopted.

As indicated from the literature, a small list of between five and 11 salient outcomes was considered to give the greatest prediction accuracy. Due to the occurrence of many low correlations this cannot be confirmed. It was found for farmers and farm workers in this sample, that about nine outcomes adequately defined the outcomes of work behaviour desired to be obtained. Salience was judged to be high due to subject generation. An outcome not salient to the respondent would not have been included.

The second area of content analysis concerned the jobs that defined the position of farmers and farm workers. The individual respondent job lists were in large measure structured by the core list provided in the questionnaire. Despite a desire to restrict respondents to sheep and cattle farming, no two farms exhibit an identical set of jobs. As a consequence the resultant job list for all farmers and farm workers tested had 36 elements, including unusual jobs such as artificial insemination and jobs outside the usual gamut of sheep and cattle farming, e.g. pig work.

Using the 30% agreement, the jobs most farmers and farm workers did contained 11 common elements. They are almost identical to those in the core list and showed no differences for farmers and farm workers.

The perceived effort required to successfully complete the jobs showed sheep shearing and crutching to be the most demanding, a possible reason why this job is commonly done

by contractors. Hay carting and woodcutting are the next most demanding. Stock work requires only moderate amounts of perceived effort, as much of this is a judgemental process conditional on land, climate and price fluctuations, rather than reflecting 'effort' as such.

Desirability ratings showed a clear preference for mustering. Although a definite ordering effect defines the remaining job desirability ranks, little discrimination is evident. The three jobs sheep shearing, haymaking and wood-cutting which require greatest effort are the least desirable, and this was an expected result. It would appear logical to associate undesirability with greatest effort expenditure. The possible exception to this is mustering. Rated as the most desirable, this job also requires much effort. The interaction of the outdoor life and stock work, (the most frequent outcomes), are the chief components of this job.

The predicted interaction shape of a cross for job desirability and an effort relationship appears to be unlikely in a pure sense. The way of life theme previously mentioned counters such things as freezing temperatures at lambing time and back-breaking sweat over sheep yard work. This may ease the desirability ratings up.

Although somewhat superficial, and ad hoc, the content analysis is a by-product of the Expectancy/valence analysis. It answers Seabrook's (1982), plea for more subject rather than model orientated treatment of farm worker motivation. Paired with the content analysis, the within-subject ' Expectancy/valence model was designed to consider the subject from his core personality. Contrary to what Seabrook implies, the application of this model did not construe the individual's response to fit a model rather, it tested the model as opposed

to testing the individual. The very nature of the Expectancy/valence theory as a within-subject methodology parallels Seabrook's 'status approach' and attempts an internal understanding of the individual worker's motivation.

6.4 LIMITATIONS OF THE STUDY

An extremely low response rate from farmers and farm workers undoubtedly is a serious limitation of the study. Two versions of questionnaire dispersal proved inadequate in stimulating workers in the rural sector to participate at a high response rate. It would be expected that a personal interview in the 'field' of the respondents would be superior to an impersonal postal enquiry. This wasn't so as the postal dispersion response rate was slightly greater than that of the personal approach.

Although some previous rural investigations have achieved satisfactory response rates; Clark (1979), received an 82% response rate and Harris (1980), a 75% response rate, the failure in this case is not unique.

Ambler (1977) conducted a study directly concerned with the response patterns to a mail survey of New Zealand farmers. Ambler shows evidence of Australian farm surveys obtaining response rates of 39 to 73 per cent. In Ambler's introduction it is stated on the basis of a review of literature -

> The expected response to New Zealand mail surveys appears to lie in the range 20 to 30 per cent.
>
> Ambler, 1977, p.3.

This seems particularly low with more recent reviews exhibiting higher rates (Clarke, 1979 and Harris, 1980).

Ambler's own results produced a 59 per cent response rate.

Of importance in Ambler's recommendations is the type of question asked within the questionnaire. This more than anything else reduces response rates.

As mentioned, conceptual confusion over the jobs and outcome similarities would make successful completion difficult for many respondents and reduce response rates.

Personal interviews and delivery had its value in showing evidence of a strong current attitude of dissatisfaction with farming by many respondents. The economic climate for agricultural production at present is bleak with many farmers expecting sharp drops in profitability for the current financial year. Enquiries of motivational forces served to highlight this theme and possibly leading to failures to respond as avoidance or denial behaviour.

A farmer's distaste for paper work and coincidence with 'farm statistics' are also possible contributory factors.

Despite the low sample size of the farmer and farm worker groups, this study has in absolute terms involved more subjects than some of those within the literature on Expectancy/valence investigations. Muchinsky (1977), used 27 subjects, Ilgen, Nebeker and Pritchard (1981), used 88 and Matsui, Kagana, Nagamatsu and Ohtsuka (1977) used 62 subjects. Though response rates were low, sample size for Expectancy/valence investigation is within the literature bounds. Inspite of this, the study has been reduced to an exploratory probe of the Expectancy/valence model in country settings.

Use of a survey methodology creates limitations. Voluntary response, biases the sample as the least apathetic portions of the sample characterise the respondents. Harris (1980), points out that response is a snapshot at that point in time and cannot account for change. A more attractive economic climate may shift farming outcomes to the material extrinsic outcomes, thus making Expectancy/valence theory more applicable.

What has been found is a trend which characterises a mismatch of Expectancy/valence theory to a rural sample at the present time. An investigation which obtains superior response rates, and one which employs a longitudinal methodology is required to describe and to generalise from a farming sample to its parent population with acceptable degrees of validity.

As a consequence of sampling, further groups emerge which should in future research, command attention. The ownership status of farmers creates two distinct groups, owners and part owners. Similarly with farm workers; there are those who are career employees and those being groomed for inheritance of the family farm. With standardised job lists characterising farmers and farm workers, future research in rural sectors should separate such groups. Outcomes of work behaviour may be different for each depending upon economic considerations. The confounding of these subgroups effects within a single sample, further limits the validity of this investigation.

The limiting nature of the sample makes population generalisations of the expectancy/model tenuous. As an initial probe, the value of this study lies in the lack of

component independence and the questionable status of the monotonically increasing function description of the Expectancy/valence model. This sample exhibited these features and as such, its only possible that the parent population of rural workers does.

The suggestion of the inappropriateness of the model for rural sector research should form the basis of further investigation.

The study falls short of demonstrating the ability of the farming sector to predict effort levels required to achieve work-related outcomes. It would appear that the sample tested is unable to do so. A foundation upon which to base future research is possibly the most valuable contribution of the study.

Content analysis of farm workers motivating outcomes and jobs gives bodies such as the CRFA some indication of specific needs of farm workers. Farmer employers might also value such insights into their employees needs. However, as Clark (1979), suggests, because of the individual nature of each farm, the typically close relationship between farmer and employee and consequent lack of anonymity, such an investigation is unlikely to yield results which would surprise or be of much use to the farmer as an employer.

Similar information describing farmers' positions, has some value in that it helps to identify what has up to now been largely speculation and personal opinion. The nature of farm work is farm and individual specific. Without larger response rates, results from this analysis remain suggestive and by no means conclusive.

CHAPTER SEVEN

SUMMARY AND CONCLUSIONS

The Expectancy/valence model of motivational effort was applied to a sample of New Zealand farmers and farm workers. It was expected that the study would yield increased knowledge of what motivational qualities and determinants this portion of the rural sector possess. The particular form of the Expectancy/valence theory used in this study was determined by relevant literature developments.

The primary aim of determining farming motivational constructs was augmented by the desire to test the theory in one area of the unique and relatively unresearched farming sector of New Zealand.

Apart from some modifications to the terminology for the rural context, little adaptation of the model was considered necessary. A relatively low rate of 111 respondents from 306, sampled from the foot hill regions of mid and north Canterbury comprised the two occupational groups. Fifty-five farmer and 35 farm workers returned sufficient information for the analysis. The additional 21 respondents participating in consequential content analysis of the questionnaire.

The relationships examined were those of the independent variables to a self-rated criterion and included various contributory components of the model as well as that of the complete model.

Apart from a few isolated cases, neither occupational group was able to significantly predict perceived effort levels, i.e. the effort levels required to satisfactorily complete their individual farm jobs in order to obtain specified desired outcomes of work-related behaviour. In addition to the model analysis, no single component was found to possess superior prediction qualities than any other model as a whole.

Relationships to criterion prediction were in the form of correlations. The mean correlations were clustered around zero for both occupational groups for all components, and model formulations. No significant differences were present between occupational groups.

These findings are in contrast with the literature trends where mean correlations of $\bar{r} = 0.30$ are typical of this form of investigation. A further characteristic of the literature is for components to exhibit, if not greater, at least similar significant predictive ability to the model formulation.

Analysis of the outcomes of work behaviour and associated valence ratings provided possible reasons for insignificant correlation coefficients. Enjoyment of the outdoor life, of a farming lifestyle and of working with stock proved to be the most intrinsically desired outcomes of work behaviour for both occupationsl groups. The need for money was the primary extrinsic outcome for both groups. The desired intrinsic outcomes are also combinations of many of the jobs farmers and farm workers do. The independence of the expectancies associated with each job and the valence ratings of the outcomes, which is an underlying assumption of the model, cannot be guaranteed. A bias towards constant

valence ratings for each outcome threatens a further underlying assumption of the Expectancy/valence model. Due to the nature of the lifestyle and the work which the farming sector demands, the model formulation cannot assume the properties of a monotonically increasing function.

The development of the Expectancy/valence model is not sufficiently mature or alternatively comprehensive enough for the model to be applied to farming samples. The assumptions of component independence and the requirement of the formulation to be a monotonically increasing function cannot be satisfied. We can conclude that the sample tested proved inappropriate for Expectancy/valence application.

Generalisation of the results to the population however, are tenuous due to the low response rate incurred. Thus the external validity of these results remains doubtful.

Content analysis of the motivational outcomes provide features common to both occupational groups. Primarily, intrinsic in nature, lifestyle, environmental and stock involvement characterise farmers' and farm workers' motivational outcomes. In a financially demanding world, the need for money and financial security motivate farmers and farm workers. A desire for independence and satisfaction is also common to both groups, with farm workers working in anticipation of eventual ownership of their own property. Significantly absent are negatively valent outcomes. The need for money while it has the lowest valence for both groups, is not negative.

Predictably both occupational groups execute the same jobs and perceive similar effort levels being necessary to complete jobs. A further similarity of jobs for farmers and

farm workers is evident in the desirability rankings. Mustering is the most preferred job of both groups, being greater in desirability than the remaining jobs. Some limited evidence exists of an inverse relationship between desirability and perceived effort ratings for both groups. Jobs requiring greater amounts of effort to complete are generally the least preferred.

In conclusion, this study has little conclusive evidence to add to either the Expectancy/valence literature or to the small body of rural psychological knowledge. Within this sample the Expectancy/valence model appears to be an inappropriate measure of motivation, in its present form. Generalisation to a wider population is questionable. The findings do, however, provide a platform from which to launch motivational research into farm worker motivation.

Features of farmer and farm worker motivational outcomes, job effort, and job desirability support trends commonly predicted in farm work but seldom verified.

The inapplicability of this model as with Clark's (1979) use of the Job Characteristics Model point to the rural sector being a specialist psychological sample.

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APPENDIX

FARM WORK MOTIVATION

SECTION ONE

1. SURNAME _____

2. CHRISTIAN NAMES _____

3. ADDRESS _____

_____

_____

4. PHONE NUMBER _____

5. AGE _____ 6. SEX _____

7. MARITAL STATUS _____

8. IF MARRIED, NUMBER OF DEPENDENTS _____

9. PLEASE TICK THE MOST APPROPRIATE BOX FROM THE FOLLOWING

I OWN THE PROPERTY ON WHICH I WORK ☐

I AM PART OWNER OF THE PROPERTY ON WHICH I WORK ☐

I MANAGE THE PROPERTY ON WHICH I WORK ☐

I AM EMPLOYED AS A FARM WORKER BY A NON RELATIVE ☐

I AM EMPLOYED AS A FARM WORKER BY A RELATIVE ☐

IF SO STATE RELATIONSHIP TO EMPLOYER _____

SECTION TWO

1. Below is printed a list of farm jobs. Cross out the jobs that do not apply to the work you do or are done by contractors or employees, (if you are an owner or manager). Add any further jobs you do which are not listed.

(a) Mustering
(b) Sheep shearing and crutching
(c) Sheep-yard work (i.e. drenching, drafting, dipping etc.)
(d) Lambing (i.e. beats, tailing, weaning etc.)
(e) Calving (i.e. beats, marking, weaning etc.)
(f) Cattle-yard work (i.e. dehorning, drenching, ear tagging)

(g) Fencing
(h) Tractor work (i.e. cultivation, maintenance etc.)
(i) Harvesting
(j) Hay making and carting
(k) Feeding out
(l) Irrigation
(m) Wood cutting
(n)
(o)
(p)
(q)
(r)

For jobs you may want to add

2. Now that you have a list of jobs that you personally do, rank order them with the job that you find the hardest to do (i.e. requires the most amount of effort), at the top of the list, down to the job you find the easiest at the bottom of the list.
To save writing enter the letter corresponding to each job on the dotted line.

1. .....
2. .....
3. .....
4. .....
5. .....
6. .....
7. .....
8. .....
9. .....
10. .....
11. .....
12. .....
13. .....
14. .....
15. .....
16. .....
17. .....
18. .....

3. You are now asked to rate the list of jobs according to how hard you find them to do. Ask yourself for each job

'how much effort is needed to get this job done?'
The most difficult job may require 100% effort or 75% effort, depending on how hard you personally find it to complete. Write a percentage rating on the dotted line beside each of the jobs in part 2 immediately above.

SECTION THREE

1. In the space provided below create a list of 10 factors or characteristics of your job as a farm worker or farmer that you feel motivates you to work. Simply ask yourself 'what motivates me to work the way I do each day?'

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

2. Now rate the attractiveness of each of the motivating factors you have just listed using the following scale. Circle the most appropriate number where -3 means you find the motivating factor most unattractive to 0 where you find the motivating factor indifferent, to +3 where you find the motivating factor most attractive.
An example is given for the motivating factor 'to own a Mercedes car'. Ask yourself 'how attractive is doing everyday work to achieve this?'

-3 -2 -1 0 +1 +2 (+3)
(most unattractive) (indifferent) (most attractive)

Every-day work seems most attractive if you wish to own a Mercedes.
Enter your list of motivating factors beside each corresponding number.

1._____ -3 -2 -1 0 +1 +2 +3

2. _____ -3 -2 -1 0 +1 +2 +3

3. _____ -3 -2 -1 0 +1 +2 +3

4. _____ -3 -2 -1 0 +1 +2 +3

5. _____ -3 -2 -1 0 +1 +2 +3

6. _____ -3 -2 -1 0 +1 +2 +3

7. _____ -3 -2 -1 0 +1 +2 +3

8. _____ -3 -2 -1 0 +1 +2 +3

9. _____ -3 -2 -1 0 +1 +2 +3

10. _____ -3 -2 -1 0 +1 +2 +3

SECTION FOUR

This section is an attempt to relate your list of jobs to the list of motivating factors you have created. To do this it is necessary to rate the relationship between doing a good job on each one in your job list and the possibility of achieving each of your motivating factors.

You are requested to firstly fill in your motivating factors down the left side of the table on the following page, and to put the letter corresponding to each job on your list in the spaces provided across the top of the table.

In this way it is possible to relate each motivating factor with each job.

To do the rating choose the most appropriate number from the following scale that best describes the job-motivating factor relationship; where

-3	-2	-1	0	+1	+2	+3
(doing a good job detracts from the possibility of achieving this motivating factor)			(doing a good job doesn't influence the possibility of achieving this motivating factor)			(doing a good job is the only way to achieve this motivating factor)

Instead of circling the most appropriate number as before, choose it and write it in the table on the next page.

An example will help clarify what is required. If the first job across the top of the table is 'doing the dishes' and the first motivating factor down the left hand column is 'to own a Mercedes', ask yourself 'how much does doing a good job of the dishes help contribute to the possibility of

owning a Mercedes?' An appropriate answer would be 0, so it would be written into the first box.

MOTIVATING FACTORS \ JOB →																		
1.																		
2.																		
3.																		
4.																		
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		

SECTION FIVE

In this section you are asked to rate the relationship between working hard on each job on your list and how successful you are as a farmer or farm worker (whichever is applicable). The scale used here is such that 0 means there is no relationship between the amount of effort you put into each job and success as a farmer, to 5 which indicates a strong relationship between effort and success as a farmer.

An example for the job 'to do the dishes' is given.

0	1	2	3	4	5
(no relationship between working hard and being a successful farmer)					(a strong relationship between working hard and success as a farmer)

An answer of 0 shows that working hard on the dishes has nothing to do with being a successful farmer.

Circle the most appropriate number for your list of jobs.

1. For job (a)	0	1	2	3	4	5
2. For job (b)	0	1	2	3	4	5
3. For job (c)	0	1	2	3	4	5
4. For job (d)	0	1	2	3	4	5
5. For job (e)	0	1	2	3	4	5
6. For job (f)	0	1	2	3	4	5
7. For job (g)	0	1	2	3	4	5
8. For job (h)	0	1	2	3	4	5
9. For job (i)	0	1	2	3	4	5
10. For job (j)	0	1	2	3	4	5
11. For job (k)	0	1	2	3	4	5
12. For job (l)	0	1	2	3	4	5
13. For job (m)	0	1	2	3	4	5
14. For job (n)	0	1	2	3	4	5
15. For job (o)	0	1	2	3	4	5
16. For job (p)	0	1	2	3	4	5
17. For job (q)	0	1	2	3	4	5
18. For job (r)	0	1	2	3	4	5

SECTION SIX

Finally, rearrange your list of jobs in the space provided below so that the job you like doing the best is at the top of the list down to the job you like doing the least at the bottom of the list.

Enter the letter corresponding to each job on the dotted line.

1. .....
2. .....
3. .....
4. .....
5. .....
6. .....
7. .....
8. .....
9. .....
10. .....
11. .....
12. .....
13. .....
14. .....
15. .....
16. .....
17. .....
18. .....

THANKYOU FOR YOUR CO-OPERATION